POTATO INDUSTRY REPORT

2016/2017

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POTATO INDUSTRY REPORT

2016/2017

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POTATOES SOUTH AFRICA

CONTENT

IDENTITY, VISION, MISSION AND VALUES

IDENTITY

The identity of Potatoes South Africa (PSA) is symbolised by:

- The authority of the potato industry which, in particular, refers to the annual turnover of the industry, measured against the total agricultural turnover and which makes it a prominent role player in agriculture and in the food value chain. In addition, potatoes constitute the biggest fresh vegetable crop in South Africa and represent more than 30% of the turnover of fresh produce markets.
- The solid character of potato producers, which is characteristic of high-risk takers who, at the same time, can cope with setbacks, remain optimistic and, most important of all, who are entrepreneurs, focussed on innovation and have solid values.
- The essence of the organisation is based on excellence in service delivery to all potato producers, as set out in its mission statement, as well as to all other role-players in the industry. The organisation aims to protect and promote the interests of potato producers in particular and the potato industry as a whole.
- The face of the organisation is representative of young, dynamic leadership, backed by passionate enthusiasm and the pursuance of stronger cohesion, as well as the ability to visualise the bigger agricultural picture and react to it with a clear vision, strong opinions, solid values, as well as the ability to establish a united front, representative of all role players. The organisation's youthful character and approach create room for innovative thinking and proactive action – to the benefit of the potato industry as a whole. In addition, the organisation symbolises transparency, stability and sincerity in all its activities.

MISSION

To provide strategic support services to a dynamic industry, thereby enhancing the sustainability of potato producers in South Africa in the following way:

- Providing the industry with industry-strategic knowledge and management support.
  - Industry strategic research.
  - Industry strategic information (market information, production information, macroeconomic information).
  - Knowledge transfer.
- To provide support services with regard to South Africa's potato consumption.
  - Market development support services.
  - Product promotion support services (e.g. consumer education, awareness creation, information sharing).
- To provide producer development support services.
  - Competency development (knowledge, skills, bursaries).
  - Technical support (best practice, advice, cultivar trials).
  - Industry structure maintenance support.

- To establish internal business excellence within PSA.
  - Business management and leadership through:
    * Business planning.
    * Corporate governance.
    * Organisational cultural development.
    * Business performance management.
    * Relationship management/communication between role-players.
  - Resource management.
    * Human resources management.
    * Financial management.
    * Secretariat.

VISION

Together towards excellence in the potato industry.

VALUES

PSA pursues excellence in the following ways:

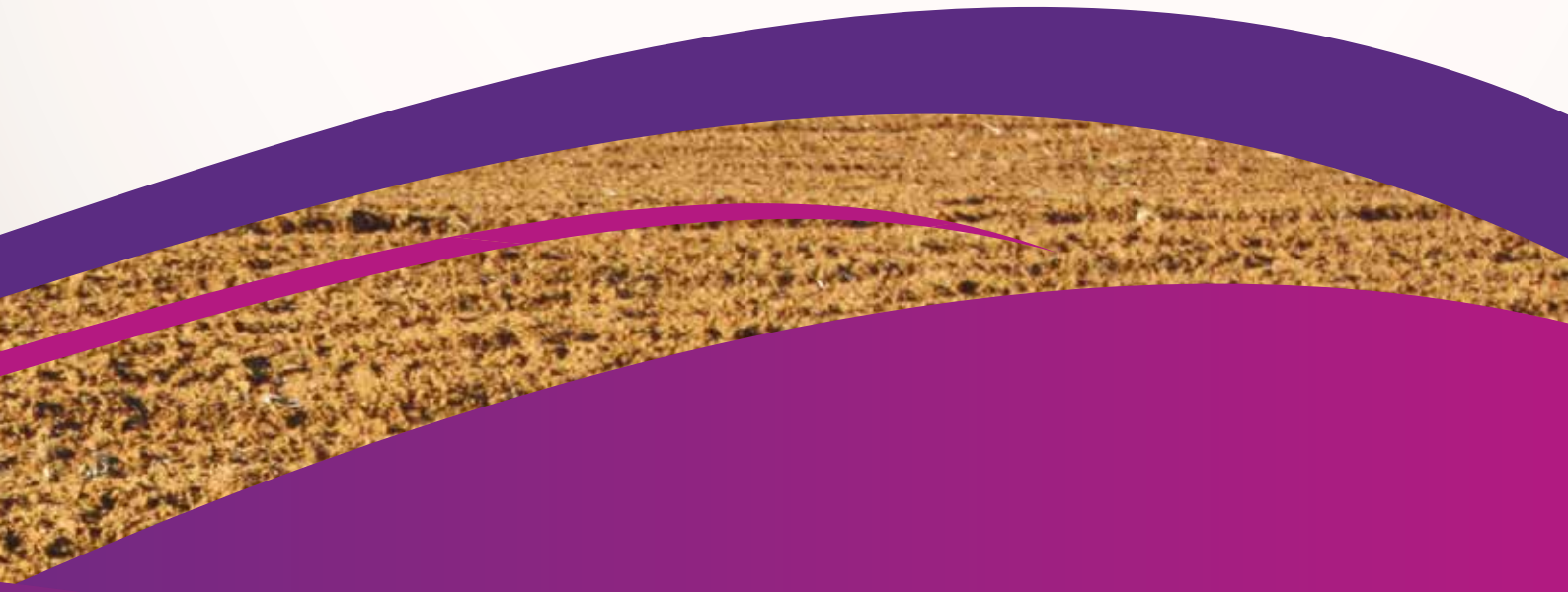
Being proactive in taking initiative, being innovative, creative, solution-driven and adaptable, as well as by taking charge and ownership, pursue continuous learning and by being development-oriented.

Demonstrating integrity by being accountable, transparent, honest, ethical, trustworthy and loyal.

Being objective by acting rationally, analytically, neutrally, impartially and factually, as well as paying attention to detail.

Providing service excellence by being responsive, willing, taking timeous action, being punctual, productive, accountable, efficient, professional, respectable, disciplined and by following organised business practices, as well as being accessible, diligent, motivated, committed, hardworking, passionate and enthusiastic.

Engaging in partnerships via collaboration, participation, involvement and team work.



FAREWELL MESSAGE BY THE CHAIRPERSON

Ernst Yzel

Over the past 12 years, Potatoes South Africa has been an integral part of my life and my way of living. It is an incredible privilege to me to have served the potato producers during this time, to have made good friends and hopefully to have made a valuable contribution to the potato industry.

During the past decade the potato industry has changed considerably. As in the rest of the world, there is a tendency that the number of potato producers has become smaller while the size of farms increased. This of course creates the problem that new entrants cannot easily get a foothold into such a capital-intensive industry.

However, I can confidently say that with the assistance of Potatoes South Africa, producers and potato industry, potato consumption was doubled in South Africa. Change is however inevitable and one such a change is that we will position ourselves as brand custodians in future.

We often underestimate the work that Potatoes South Africa does for us as producers. In recent times we have been faced with completely new problems. An example is the importation of processed potatoes that have increased tremendously in which Potatoes South Africa played a role in protecting our industry and our workers.

Research

Research within the potato industry has also changed dramatically. Compared to other big potato countries, Potatoes South Africa did an excellent job. In South Africa, all potato research is financed by the producers themselves and research has made a significant contribution to the increased production per hectare. Now there is a whole range of cultivars that can be used with much higher yields and much better properties of resistance to diseases.

Transformation

In many respects, we are leaders in the area of transformation. This has also been stated by our government. As a potato industry we can feel very proud of our efforts to establish producers of colour. There is still a lot of work to do and I have to say that it is not a very easy process. However, we as potato producers are committed to make it work and we will make it work.

Information

Within the potato industry we probably have the most comprehensive information system of virtually all agricultural industries in South Africa. In the past few years we have converted the data and information that we have into intelligence that can be very valuable to us as producers and PSA can be proud of this.

Marketing

The pursuit of building, growing and sustaining a vibrant potato industry is possibly the driving force behind a persistent and continuous development of world class marketing campaigns.

The two pillars of the marketing division are Market Access and Development (MAD) aimed at monitoring the regulatory environment as well as identifying new markets for South African potatoes.

Generic Product Promotion (GPP) is concerned with stimulating demand in the local market by positioning potatoes as a food secure product that is nutritious, easily accessible and affordable.

Thus the slogan used in all local promotional campaigns is: Always fresh, always in season!

Management

PSA has been through challenging times and with the advent of statutory levies, which is a difficult environment in which to function, with a small increase in statutory levies, we were able to create a lot more value to producers.

Potato producers in particular can feel proud of PSA and within the Board, who are all producers, there is incredible knowledge. Producers can rest assured that their money is in safe hands with this team of Directors who serve the industry.

Seed potato growers

We should also complement to our seed potato growers for the good plant material that they provide. It is good to work with plant material that one knows will give good yields - because it is where true potato production begins - with good seed.

Personnel

At Potatoes South Africa I was privileged to work with incredible personnel. First, I worked with the now deceased Dr Niel Theron. Then I had the privilege of working with Mark du Plessis. During the past few years, I worked with Dr André Jooste who is a highly skilled man in his field and the two of us worked particularly well together. Thank you to our personnel, it was great to work with you. We had many challenges, but we also had very good times. Thank you very much.

In conclusion, I want to say thank you to the potato industry who supported me for so long, for lifting my hands during difficult times - it was really a privilege for me to be part of the potato industry.

Ernst Yzel
Chairperson

CHIEF EXECUTIVE OFFICER'S REPORT

ANDRÉ JOOSTE (PHD)

South Africa is self-sufficient in potatoes and the value of the primary industry is estimated at R7 billion. If processing and other value-added activities are included all the way downstream to the consumer, the industry has a value of up to R25 billion. Potatoes, a labour-intensive industry, employs almost 10% of the South African labour force in primary agricultural activities, while using less than 1% of arable land. South Africa exports between 8% and 10% of its total potato production to neighbouring countries.

The 2016/2017 financial year presented some of the most challenging times for South Africa's potato production industry.

Prices realised in 2016 were substantially higher than in 2015 as a result of crop losses due to drought and high temperatures. However, the widespread rain reported late in 2016 had occurred erratically and was accompanied by hail in some regions, which damaged the crop to be marketed in early 2017.

The increase in the national minimum wage was one of the main challenges the industry had to face in 2017, as potato production is particularly labour-intensive and labour costs contributes significantly to overall production costs. In an environment where real production costs continued to increase, while potato prices remained under constant pressure, reduction in manual labour and the introduction of increased mechanisation could occur if minimum wages increased to unsustainable levels.

PSA is therefore well aware that market information and intelligence is the backbone of decision making. It therefore continuously strives to improve the alignment of the information sources and the variety of information with the needs of industry. All workable and available communication channels are therefore used to make the market intelligence available as quickly as possible. Of the channels that are used are mobile phone SMS, WhatsApp messages, newsletters, newsflashes, visits to producers and the website.

PSA's research is currently focusing on the following aspects:

- Cultivar evaluation to increase yield
- Soil health, soil improvement and natural resource conservation
- Quality
- Virus and aphid control
- Water use and quality
- Cultivation / agronomy, especially fertilization and volunteer control
- Management of soil-borne diseases: common scab; root-knot nematodes; powdery scab and soft rot
- Potato moth management

PSA's marketing division has two pillars. The first pillar, Generic Product Promotion entails projects aimed at stimulating demand in the local market through classical product promotion mix elements of above the line advertising, Public Relations, and digital marketing. The second pillar, Market Access and Development, endeavours to expand the total market for potatoes through market development and market penetration strategies. The goals that drive and measure all marketing campaigns are:

- Managing consumer attitudes and perceptions towards the product through better, factual and scientifically proven research
- Stimulating local and foreign demand for South African potatoes

- Positioning potatoes as a product that aids food security
- The management and utilization of positive relationships and involvement with stakeholders
- Creating a conducive, productive and profitable business environment for producers.

The purpose of the Transformation core business within PSA is to ensure the development of new black producers who are interested in becoming commercial producers. It also aims to address food security by engaging with rural communities and helping them through demonstration plantings where they are taught to plant potatoes economically for consumption.

PSA has been involved in transformation projects over the last few years, and progress is increasingly noticeable. The number of hectares of potatoes planted by black producers with support from PSA is increasing, and there are producers who are already farming commercially.

During the year under review, PSA focused on the following transformation projects:

- Enterprise Development
- Small Farmer Development
- Tertiary Skills Pipeline
- Farm Based Training
- Commodity Projects Allocation Committee (CPAC) in the Western Cape

Finance and Administration

Personnel Matters

In the past financial year the following staff movements took place:

- Ms Nicolette Basson was appointed in the position of Accountant on 5 September 2016 after the post became vacant with the resignation of Mr Gert Kok on 22 July 2016.
- Mr James Sithole resigned from the position of Accountant on 31 July 2016 and it was decided not to fill the post for the time being.
- Ms Anza Delport accepted service on 01 November 2016 after the post of Financial Officer in the Finance section became vacant with the resignation of Ms Monique van der Merwe on 03 November 2016.
- Ms Rotondwa Rathogwa has been appointed Administrative Officer in the vacant position in the Transformation Division after Ms Audrey Masombuka resigned from PSA on 24 June 2016.
- Mr Rudolf Badenhorst resigned from the position of Manager: Market Development on 31 December 2016. However, the post will be filled by the position of a Marketing Specialist.

Financial matters

On 30 June 2017 PSA ended off the second year of the fourth statutory period. Every year an amount in the form of bridging capital is transferred to the next year. This is simply done to continuously maintain a positive cash flow as the Potato Industry Development Trust (PIDT) continuously have a high debtors' book. This is the result of the inevitable time lag for bag manufacturers to recover the levy from their debtors (producers). The past year was also marked by the pressure of the drought and other climatic conditions on the volumes and therefore on the statutory levy income of the PIDT.

This necessitated savings. Savings on actual net expenditures amounted to 5.8%. The savings are the result of proactive action by the Board and Management of PSA and consist of coincidental as well as deliberate savings on operational costs and projects.

Statutory income and expenditure

PSA Non-profit Company (NPC) as administrator collected R42 463 090 on behalf of the PIDT in statutory levies during the 2016/2017 financial year. This amounts to approximately 99.5% of all levies recovered that were invoiced by bag manufacturers. A further R63 722 was received in interest on investments.

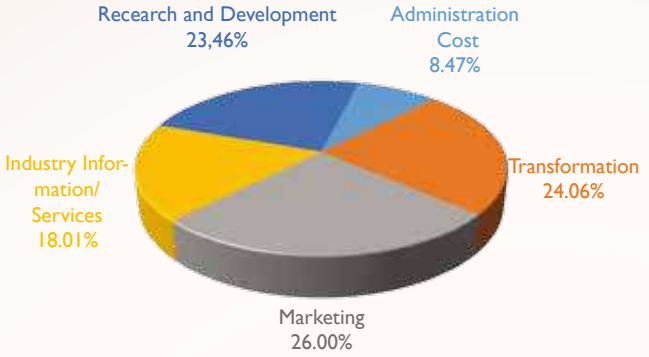
The 2016/2017 budget of PSA (NPC) as approved by the PIDT amounted to R45 379 081 of which R41 907 183 was appropriated. The underspending of R3 471 899 (7.7%) was attributable to the continued savings interventions. There was reasonable savings on travel and accommodation costs, and especially on personnel costs in the light of the vacancies mentioned above which were not filled, as well as on other operational costs.

Capital in the PIDT transfer capital account started off with R7 182 955 as per Ministerial approval and amounted to R7 454 305 on 30 June 2017 and will be transferred to the 2017/2018 financial year. As set out in Figure 1, PSA (NPC) managed to meet the prescripts given by the Minister of Agriculture, Forestry and Fisheries.

According to a PSA Congress decision, equal funds had to be allocated to the two Core Businesses Research and Development and Market Development and Generic Product Promotion. The marginal deviations in respect of the above were due to decisions made during the previous financial year to ensure that PSA (NPC) complies with good corporate governance in respect of tender processes as well as to the postponement of funding to enterprise development farmers due to the drought. This gave rise to funds being transferred to the 2016/2017 financial year, but still utilised in the relevant core businesses. The decision was taken that a ratio of about 60%:40% between operational and project costs should be maintained. In this regard PSA (NPC) succeeded.

The expenses of approximately R42.0 million was utilized as follows (rounded off, refer to Figure 1):

Figure 1: PIDT appropriation of funds



Income From Own Reserves

PSA (Voluntary) own funds are mainly supplemented by the following:

- Return on investments and loans: R799 170
- Rent received on capital items: R558 485

Expenses related to the normal income as mentioned above are depreciation of assets R418 087, auditing and legal costs R42 087, administrative costs R152 871, corporate and other project costs R138 303 (refer to Figure 3).

Additional funds received include R505 013 which was generated by the hosting of the Potato Research Symposium and R507 143 by sponsorships of Regional Meetings. The Symposiums and Regional Meetings were funded in total by additional income received from sponsors during the year under review.

Total funds and reserves amounted to R11 999 268. Property and movable assets, based on book value amounted to R249 628 and investments and loans to R11 146 235.

Figure 2: Income PSA (Voluntary)

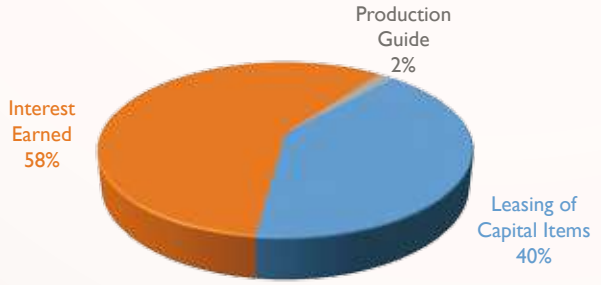


Figure 3: Expenditure PSA (Voluntary)

Financial Position

I am proud to say that the financial position of PSA is still healthy to the core. The pressure due to the decrease in revenue is fully absorbed by curtailing the expenditure side.

Tally and control measures are continuously reviewed and tightened to restrain operational costs and thereby ensuring a healthy balance between operational costs and the appropriation in respect of projects. The PIDT accepted the audit reports by KPMG. KPMG as well as Fourie & Botha issued an unqualified report in respect of PSA (NPC) and PSA (Voluntary), respectively.

No audit misstatements were identified during the audit. PSA has been retained by the PIDT as administrator to manage the statutory measures which includes the collection and management of the statutory levies. As part of its managerial responsibilities, PSA is also responsible for the implementation and management of the core business projects accepted by PSA's Board of Directors and approved by the PIDT.

COMMUNICATION

The core of PSA is based on excellent service to all potato producers, as set out in the mission statement, as well as excellent service to all other role players in the industry. The organisation aims to protect and promote the interests of potato producers in particular, and the potato industry as a whole. Effective two-way communication with role players is therefore extremely important to PSA. It is therefore constantly sought to expand this communication to the advantage of potato producers and other role players in the potato value chain.

During the year under review, an electronic library system was developed to facilitate the search function on the more than 3 000 articles and documents currently published on PSA's website (www.potatoes.co.za).

At the end of June 2017, CHIPS magazine boasted with its 29th volume. The bi-monthly publication is the only official magazine in the South African potato industry and serves

as a platform for important communication regarding industry information, research, market development, generic product promotion and transformation. In addition to a variety of other information, the magazine also provides a glimpse of local and international news relevant to the potato industry. Advertising income covers 100% of the production and distribution costs of CHIPS.

Other communication channels are also used to convey real-time information to role players. This includes the monthly newsletter containing market commentary, news flashes on *ad hoc* issues, text messages and direct e-mails. The value of the communication transmitted by the above channels is clear from daily requests from stakeholders to be placed on the distribution lists.

SECRETARIAL SERVICES

PSA ensures representation throughout the potato value chain by way of having seats on industry-oriented forums and committees. This structure provides a platform for debate, discussion and decision making where all role-players have a turn to speak. The forums and committees that took place during the year under review are set out in Table 2. PSA provides the necessary administrative and secretarial services to all forums and committees, with the exception of the National Seed Potato Committee and the Seed Potato Growers' Forum, as these services were provided by the Potato Certification Service during the year under review.

Table 2: Meetings

MEETINGS	NUMBER
Boards	
Potatoes South Africa	2
Potato House	2
PSA Committees	
Management Committee	2
Marketing Committee	3
Information Committee	3
Research Committee	3
Transformation Committee	3
Audit Committee	3
Human Resources Committee	3
PIDT and Committees	
Trust	3
Risk and Audit Committee	3
Bursary Committee	2
Forums	
Seed Potato Growers' Forum	1
Seed Potato Traders Forum	1
ASA Symposiums	
Transformation Forum	1
Potato Research Symposium	1
Marketing Symposium	1
Other	
Potato Industry Forum Steering Committee	1
Induction Programmes	
Bursary Students Induction Programme	1
Enterprise Development Farmers Induction Programme	1

IN CONCLUSION

I would like to express my gratitude to the PIDT, the PSA Board, our potato producers, role players on the various forums as well as the staff of PSA for continued dedication to make the industry sustainable. It was a privilege to liaise with you and to jointly find solutions to the many challenges facing the industry. Mr Yzel, thank you for your continued leadership, dedication, support and passion for the potato industry. You are indeed an excellent Chairperson!

André Jooste (PhD)
Chief Executive Officer

CHIEF FINANCIAL OFFICER

Hein Oberholzer

BUSINESS REPORT

STRUCTURE

PSA is a non-profit company, incorporated in terms of the Companies Act, 2008 (Act No. 71 of 2008), established to serve, protect and promote the interests of the South African potato industry. It operates as an organisation with an integrated structure that comprises a network of industry-orientated forums and committees on which participating role-players and individuals have a seat.

This structure ensures that the organisation executes its mandate to render a comprehensive service to the potato industry as a whole.

FINANCING

The activities of PSA are funded by a statutory levy on potatoes, held in the PIDT. As the appointed administrator, PSA collects the levy on behalf of the PIDT and applies to the PIDT for funds to finance its activities and administration. In accordance with the ministerial guidelines, the funds are appropriated as follows:

- Approximately 70% for the delivery of the core business functions (excluding transformation).
- Not less than 20% for the delivery of the transformation function.
- Not more that 10% for the delivery of the administrative function.

PSA also has non-statutory funds available that are supplemented by sponsorships and combined project funding. These funds are used to fund projects and functions in the interest of potato producers in particular and the potato industry in general. Approval for the appropriation of such funds lies with the board of directors of PSA.

BOARD OF DIRECTORS

The PSA board of directors is representative of the potato producers in the 16 potato production regions, the seed potato growers and black enterprise development potato producers. During Congress (2015) the Board of Directors was restructured. The Board of Directors has been constituted as shown in Table 3.

Table 3: National Council / Board of Directors

NAME	POSITION	REPRESENTING
Mr GE (Ernst) Yzel	Voorsitter	Independent / Non-Aligned
Mr JF (JF) van der Merwe	Vice-Chairperson	Western Region (Northwest Cape, Northern Cape, **Western Free State**, Southwestern Free State)
Mr BS (Bernhardt) du Toit	Director	Southern Region (Sandveld, Eastern Cape, **Ceres,** Southern Cape, South Western Cape)
Mr JPJ (Jan) van Zyl	Director	Southern Region (**Sandveld,** Eastern Cape, Ceres, Southern Cape, South Western Cape)
Mr NJ (Nicolaas) Lourens	Director	Eastern Region (KwaZulu-Natal, **Eastern Free State** and North Eastern Cape)
Mr JR (Rudi) Heinlein	Director	Northern Region (**Limpopo**, Mpumalanga, Gauteng, Loskop Valley)
Mr WA (Wouter) van Amstel	Director	Northern Region (**Limpopo,** Mpumalanga, Gauteng, Loskop Valley)
Mr JAF (Johan) van den Heever	Director	Northern Region (Limpopo, **Mpumalanga, Gauteng, Loskop Valley**)
Mr MJ (Mike) Green	Director	Eastern Region (**KwaZulu-Natal, North Eastern Cape,** Eastern Free State)
Mr AS (André) Coetzee	Director	Western Region (**North Cape, Northern Cape, South West Free State,** Western Free State)
Mr GA (Gary) Vorster	Director	Producers' Representative: Audit Committee
Mr L (Tiekie) de Kock	Director	Chairperson: National Seed Committee
Mr J (Joseph) Bantom	Director	Southern District (Western Cape, Sandveld, Ceres, Southern Cape, South Western Cape)
Mr TS (Siseko) Vikilahle	Director	South Eastern District (Northwest Cape, Eastern Cape)
Mr S (Shadrack) Mabuza	Director	Eastern District (KwaZulu-Natal)
Mr SG (Gift) Mafuleka	Director	Central District (Limpopo, Free State, **Gauteng,** Mpumalanga)

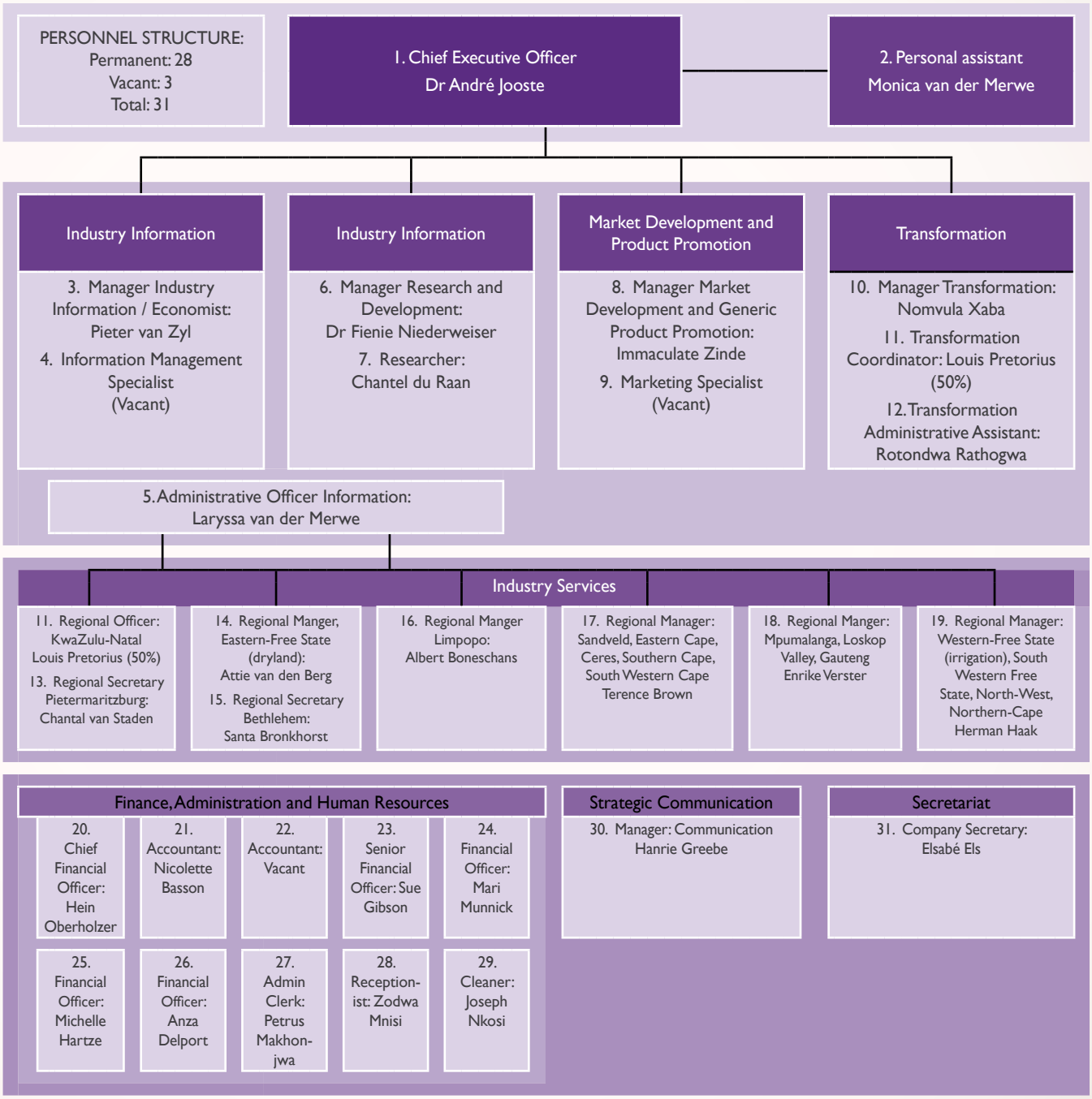
In terms of the Memorandum of Incorporation of the company, the Chairperson of the Audit Committee will be a non-executive and unattached qualified person. During the year under review, Mr J H du Plessis of the chartered auditing firm, Geyser and Du Plessis, again served as chairperson of this committee.

ADMINISTRATION

Apart from three vacancies, on 30 June 2017 PSA had 28 full-time employed staff members of which 9 served at the six regional offices to ensure optimal service delivery to the industry. The services rendered are discussed at length in the core business reports.

The staff is led by an executive management, which consists of the Chief Executive Officer, Company Secretary and the Managers of the five core businesses and support services divisions as indicated in Table 4.

Table 4: Personnel structure



INDUSTRY INFORMATION

Potatoes South Africa is fully aware of the fact that market information and intelligence form the backbone of decision making. An ongoing effort is therefore made to better align the information sources and the variety of information with the needs of the industry. All suitable and available communication channels are also utilised to release the market intelligence as soon as possible. Among the channels used are cell phone SMSs, WhatsApp messages, newsletters and the website.

Key focus areas

Table 5: Industry Information Department key focus areas

Focus areas	Components
Production and market information	Market and marketing reports: Daily, weekly, monthly, seasonally and yearly. Regular crop reports from 16 production regions. Monthly market commentary (email & WhatsApp). Fresh-produce markets: Trend analysis.
Production costs	Updating of production cost models. Analysis of packaging and marketing costs. Updating of price/yield model (fresh versus processed potatoes). Trend analysis. Transport cost models. Transport costs and related matters.
Agri Benchmark	Annual updating of a "typical" potato farm: four largest regions. Comparison of "typical" potato farms: SA versus foreign countries. Test "what if" scenarios on "typical" farms (farm-level modelling).
Potato value chain analysis	Determine and analyse the following indicators, among others: Size of industry, per capita consumption, main varieties, gross production value and consumer expenditure.
Potato industry model	Produce a potato production forecast for the coming years, by making use of a specific set of assumptions. Conduct scenario analysis or use different sets of assumptions to generate a better understanding of the potato industry.
Efficiency in the potato production process	Packhouse and marketing efficiency. Important indicators are calculated, compared and studied, and norms are established: Packhouse efficiency. Investment in machinery and implements versus labour. Market price analysis. Weight loss over times and the reasons. Size groups. Quality index for producers delivering to the market.
	Optimisation of energy and water consumption for potato production. The study was done by conducting various case studies in the Sandveld. The following is of importance: Test the effect of different scenarios on energy costs. In the process, energy consumption efficiency was also tested and studied. Water consumption efficiency among co-workers was calculated and compared. The efficiency of irrigation systems among co-workers was determined and compared.
Database building and maintenance	Potatoes South Africa gathers all types of information on a daily, weekly, monthly, seasonal and yearly basis. It is essential that all information is gathered, processed and distributed in an orderly manner. Relevant information is added to the database.
Ad hoc / other	Requests from, among others, the Competition Commission and SARS regarding industry matters.

Table 6: Information Committee

Member	Position	Representing
Mr Jan van Zyl	Chairperson	Sandveld
Mr Wouter van Amstel	Vice Chairperson	Limpopo
Mr Wessel du Randt	Member	Eastern Free State
Mr Charl Nel	Member	Western Free State
Mr Jan Genis	Member	Sandveld
Mr MC Venter	Member	Co-opted (Limpopo)
Mr Johan Holtzhausen	Member	Co-opted (Mpumalanga)
Mr Roland Buys	Lid	Co-opted (KwaZulu-Natal)

The following activities, among others, received attention:

Production costs were updated for nine regions. The transport cost model was also updated, which serves as a benchmark for producers making use of their own transport to markets. Excel spreadsheet models were developed for both the production costs and transport costs of potato production. Producers can capture their own information and compare their costs with the benchmark figures.

The packhouse and marketing efficiency study was conducted and concluded in four regions. This consisted of the following components, among others:

- Packhouse norms were developed

  Among other things, labour efficiency and mechanisation level were considered. An important indicator used is the 'average number of 10kg bags handled by one person per day in the packhouse. The question is how efficiently labour and capital (mechanisation) are utilised in the packhouse.
- Weight loss measurements were taken

  According to law, a 10kg bag, seven days after packaging, must weigh a minimum of 10kg. Weight loss was measured and studied in four regions.
  Data is required to provide input to motivate changes to the applicable regulations. There is great variation in weight loss among co-workers. One reason for the aforementioned variation is mechanical damage. Reasons for the above are being investigated.
- Size groups

  Data is collected in order to provide input to motivate changes to the applicable regulations. Meetings were held with role players in order to obtain inputs.
- Market price analysis

  Co-workers' market prices for Class 1 Large Medium and Medium potatoes were obtained from certain markets and analysed. Market prices were also compared with packhouse indicators, for instance labour efficiency and level of mechanisation. The analysis provides a benchmark according to which producers can measure themselves.
- Quality index for individual producers delivering to markets.

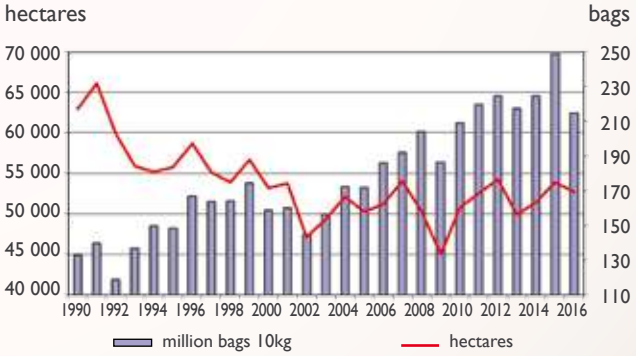
  The index gives producers a benchmark according to which they can measure or compare themselves to other producers in the region. Seven criteria are used to assign a total score to each producer. Producers can clearly see their "weak points" and "strong points" in respect of their product on the market floor.

A project titled "*Optimisation of energy and water consumption for potato production*" was concluded in the Sandveld. The results show that electricity costs per hectare of potatoes vary greatly among farmers. Case studies were done at particular producers during which the efficiency of their pivots was measured. The water consumption efficiency of co-workers (kg potatoes marketed per mm water irrigated) was calculated and compared. Scenario analysis were done accordingly on the basis of spreadsheet-type software to determine whether co-workers' electricity costs per hectare can be reduced. Energy consumption efficiency among co-workers was also calculated and analysed. Various role players, including Eskom, were involved.

Market trends

During the 2016 crop year, 52 722 hectares of potatoes were planted, which is 1 211 hectares fewer than the previous year's plantings. Drought and extremely high temperatures led to a crop of 215 million 10kg bags, which is almost 34 million 10kg bags fewer than in 2015 (see Figure 4).

Figure 4: Hectares planted versus crop size



With regard to the 2016 crop year, the Eastern Free State production region planted the most hectares, 11 533 hectares, representing 22% of the total hectares planted (see Table 7). The Limpopo production region yielded the largest crop; almost 50 million 10kg bags, representing 23% of the national crop. The four largest production regions planted 70% of the total hectares, yielding 66% of the national potato crop.

Table 7: Potato production in 16 regions - 2016 crop year

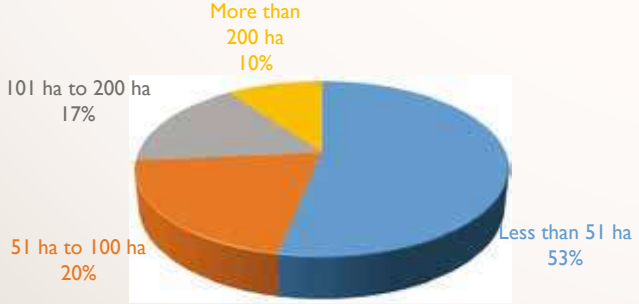
	Region	Hectares	% of hectares	Total harvest in 10kg bags	% of harvest	Average yield in ton/ha
1	Eastern Free State*	11 533	22%	23 541 064	11%	20,4
2	Limpopo	10 619	20%	49 927 500	23%	47,0
3	Western Free State	7 292	14%	35 017 760	16%	48,0
4	Sandveld	7 205	14%	33 366 000	16%	46,3
5	KwaZulu-Natal	2 792	5%	9 540 817	4%	34,2
6	North West	2 263	4%	13 771 400	6%	60,9
7	Mpumalanga	2 048	4%	8 091 500	4%	39,5
8	Northern Cape	1 681	3%	9 610 380	4%	57,2
9	North Eastern Cape	1 574	3%	5 391 669	3%	34,3
10	Marble Hall	1 382	3%	6 180 100	3%	44,7
11	South Western Free State	1 328	3%	7 308 831	3%	55,0
12	Gauteng	973	2%	3 895 400	2%	40,0
13	Eastern Cape	911	2%	3 905 500	2%	42,9
14	Ceres	788	1%	3 512 357	2%	44,6
15	Southern Cape	247	0,5%	1 127 200	0,5%	45,6
16	South Western Cape	86	0,2%	361 200	0,2%	42,0
		52 722		214 548 678		40,7

*Dry land cultivation occurs

Table 7 also shows the average yield of the different regions. Dryland cultivation took place mainly in the Eastern Free State and to a lesser extent in the Western Free State, which had an unavoidable effect on the average yield of these regions.

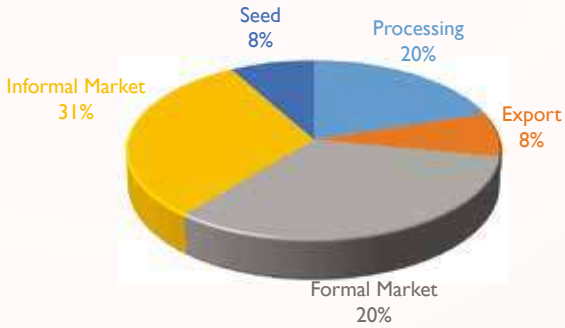
The number of commercial potato producers (farming units), dropped to 540 in the 2016 crop year. In 2010 there were 690 producers. In comparison, 10% of all producers each planted more than 200 hectares of potatoes (Figure 5). It is also clear that 53% of producers each planted fewer than 51 hectares of potatoes (Figure 5).

Figure 5: Percentage of producers versus size of planting in hectares (2016)



According to Figure 6, it is clear that the informal market is the largest outlet for South African potatoes. Approximately one third of the national crop is marketed through the formal marketing channel.

Figure 6: Distribution of total potato 2016 crop



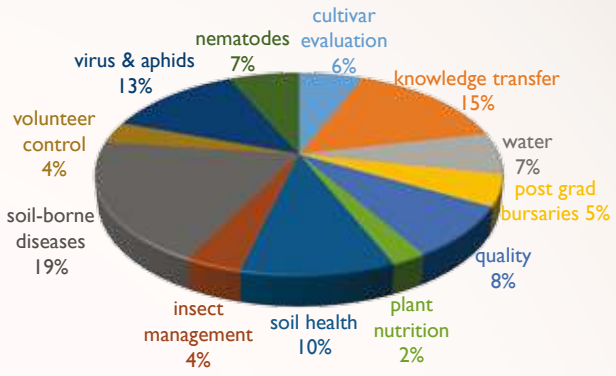
RESEARCH AND DEVELOPMENT

PSA's research is currently focusing on the following aspects:

- Cultivar evaluation to increase yield
- Soil health, soil improvement and natural resource conservation
- Quality
- Virus and aphid control
- Water use and quality
- Cultivation / agronomy, especially fertilization and volunteer control
- Management of soil-borne diseases: common scab; root-knot nematodes; powdery scab and soft rot
- Potato tuber moth management

Allocation of the budget to the different focus areas is as follows:

Figure 7: Allocation of budget to different focus areas



Research Committee

The Research Committee is responsible for identifying research priorities, to ensure that quality research is conducted and to recommend the research budget to the Board of Directors for approval. The Committee is supported by the PIDT Technical Advisory Committee and Potato Workgroup Chairpersons' Committee.

Table 8: Research Committee

Member	Position	Representation
Mr JAF van den Heever	Chairperson	Loskop Valley, Mpumalanga and the Processing Committee
Mr AS Coetzee	Vice-Chairperson	South-Western Free State, Northern Cape and North West
Mr GF Bester	Member	Eastern Free State
Mr A de Villiers	Member	Sandveld and Ceres
Dr FI du Plooy	Member	PIDT Trustee
Mr G Gadda	Member	Limpopo
Mr GG Hill	Member	KwaZulu-Natal, North-Eastern Cape and Seed Growers
Mr PGJ Posthumus	Member	Western Free State and Seed Growers
Mr L Rix	Member	South-Western Cape, Southern Cape and Eastern Cape

Table 9: PIDT Technical Advisory Committee

Member	Position	Speciality
Dr FI du Plooy	Member	PIDT Trustee
Dr FDN Denner	Member	Pathologist
Dr BJ Pieterse	Member	Agronomist

Table 10: Potato Workgroup Chairpersons' Committee

Member	Position	Representation
Mr AF Coetzee	Chairperson	Research Committee
Mr GF Bester	Member	Research Committee
Mr S Bell	Member	North-Eastern Cape Potato Workgroup

Member	Position	Representation
Mr P Brink	Member	Sandveld Potato Workgroup
Mr R Buys	Member	KwaZulu-Natal Potato Workgroup
Mr L Cass	Member	Mpumalanga Potato Workgroup
Mr R Cilliers	Member	Eastern Cape Potato Workgroup
Mr I Cronje	Member	Western Free State Potato Workgroup
Dr FI du Plooy	Member	PIDT: Technical Advisory Committee
Mr S Fourie	Member	Eastern Free State Potato Workgroup
Mr S Grobbelaar	Member	Limpopo Potato Workgroup
Mr J Hugo	Member	South-Western Free State Potato Workgroup
Mr I Oosthuizen	Member	Ceres Potato Workgroup
Mr D Ras	Member	Loskop Valley Potato Workgroup
Mr J Steenkamp	Member	Northern Cape Potato Workgroup

Research Partners

PSA has several professional research partners to conduct specific projects. The table below lists the research institutions and the projects for which they are responsible. PSA is responsible for knowledge transfer projects.

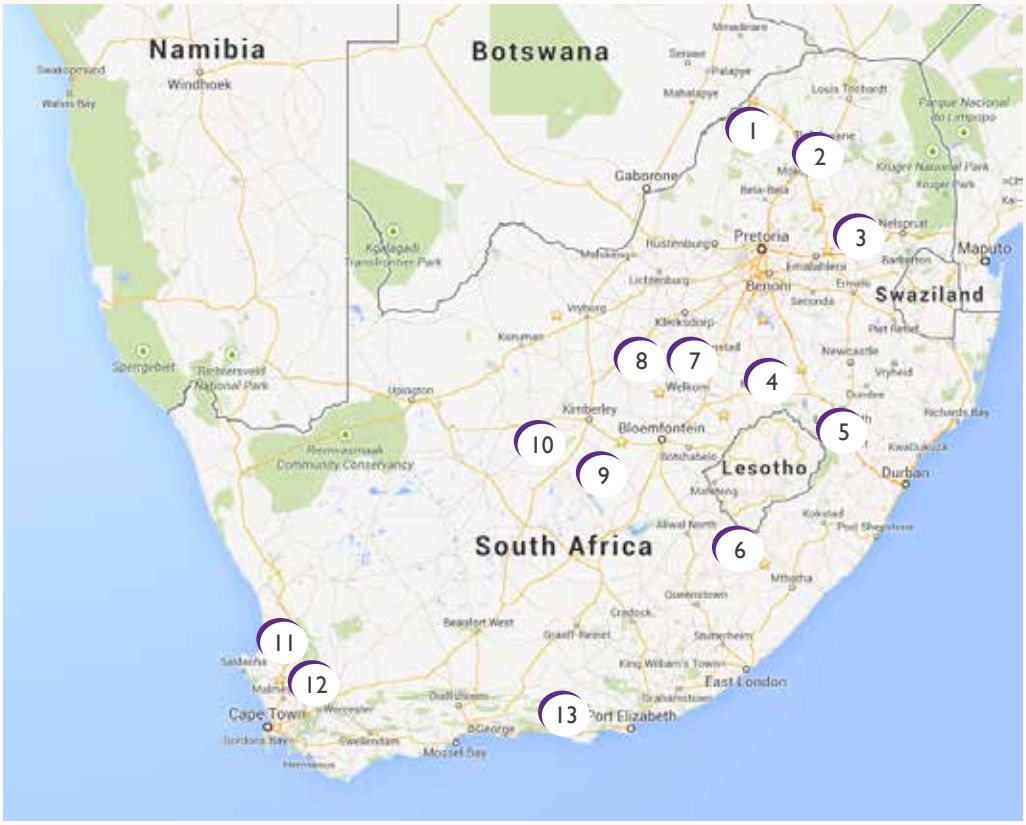
Table 11: Research Partners

INSTITUTION	PROJECTS
GEOSS	Monitoring of groundwater levels in the Sandveld
Agricultural Research Council	In vitro maintenance of open cultivars Development of a diagnostic test for fissure scab, and evaluation of cultivars with reference to the disease Study on the integrated management of nematodes Evaluation of the tolerance of popular cultivars against common scab Measures to control bacterial wilt (*Ralstonia solanacearum*) Succession of nematodes in a Free State potato rotation system Aetiology and pathogenicity of verticillium wilt of potatoes
Stellenbosch University	Identification of the most important factors affecting internal quality
University of Pretoria	Monitoring of virus vectors (plant aphids) Development of a technique to identify virus-infected aphids Development of fertiliser guidelines for two new cultivars Determination of the water footprint of potatoes using advanced technology Evaluation of different crop rotation programmes in the Eastern Free State Evaluation of the tolerance of popular cultivars to root-knot nematodes Evaluation of the tolerance of popular cultivars to soft rot pathogens Evaluation of the tolerance of popular cultivars to the powdery scab pathogen *Spongospora subterranea* sp *subterranea* (*Sss*) Identification of alternative host plants of Sss Effect of soil temperature and moisture on infection of potato by Sss
University of the Free State	Management of volunteer potatoes
Western Cape Department of Agriculture	Investigation into the effect of climate on the activity and intensity of virus vectors in the winter rainfall region. Conservation tillage in the Sandveld

Cultivar Evaluation by Potato Work Groups

During the 2016/2017 financial year, 13 cultivar evaluation trials were conducted in 11 potato production regions as indicated in Figure 8. Two of the dryland trials in the Eastern Free State were not harvested as a result of the severe drought in the region.

Figure 8: Cultivar evaluation trials conducted production regions



1 Tom Burke
2 Polokwane
3 Middelburg
4 Warden (dry land)
5 Weenen
6 Ugie
7 Kroonstad (dry land)
8 Bultfontein
9 Petrusburg
10 Douglas
11 Aurora
12 Ceres
13 Hankey

Project Progress

See table 12 below for a breakdown of project progress during the year under review.

Table 12: Project progress

	PROJECT	OBJECTIVES	PROGRESS AND HIGHLIGHTS
CULTIVAR EVALUATION AND MAINTENANCE	*In vitro* maintenance of potato cultivars	To maintain open and licensed ARC cultivars in vitro To make nuclear material available to commercial tissue culture laboratories To renew clones to prevent the degeneration of nuclear material	Seven cultivars were successfully maintained In *vitro* virus-free plants were supplied to five commercial laboratories New clones of Van-der-plank, Up-to-date, BP1 and Mnandi were established A quarantine service for the import of new clones and cultivars was offered to commercial companies
	Cultivar evaluation	To support potato workgroups to perform cultivar evaluation trials, to analyse the data and to write reports	Thirteen cultivar evaluation trials were done in 11 regions Data was statistically analysed and reports written. These reports were published in CHIPS and discussed during the Research Symposium and regional meetings

	PROJECT	OBJECTIVES	PROGRESS AND HIGHLIGHTS
SOIL HEALTH AND CONSERVATION	Conservation tillage in the Sandveld	To develop guidelines for conservation tillage practices to combat the effects of wind erosion in the Sandveld To evaluate the effect of conservation tillage on yield, water use efficiency and soil properties	Significant differences were indicated for a fourth season with regard to soil microbe respiration and active carbon levels, with the highest levels recorded for the plots prepared using the para-plough Plant parasitic nematodes were the most abundant in soil that was prepared with the conventional plough With para-plough tillage, the deeper soil layers were less compact than the other tow tillage methods
	Crop rotation programme in the Eastern Free State	To optimise crop rotation systems for the Eastern Free State with the aim of improving soil health, the physical and chemical properties of the soil, as well as the profitability of potato production under dryland conditions	Four rotation cycles of five years each were established with potatoes, maize, sugar beans, sunflowers and soybeans Soil microbe diversification was affected by the type of crop Planting sunflowers and introducing a fallow period reduced the levels of *Fusarium solani* in soil A detailed survey of nematodes on each plot formed the basis to determine the effect of different crops on the nematode population
QUALITY	Method to test potatoes for suitability for different cooking methods	To determine how the culinary characteristics of potatoes are affected by climate and production methods To develop a user-friendly method to test potatoes for suitability for the preparation of different potato dishes	A user-friendly, standardised method was developed Tubers grown in different climates and regions were tested using the testing method which proved to be highly suitable
	Internal quality of potatoes	To identify specific internal tuber qualities to predict quality	The first results indicate that weight loss may be related to low levels of Mg in tubers
APHID MONITORING	Aphid monitoring in five seed production regions	To monitor aphid numbers in the Sandveld, Ceres, Northern Cape, Western Free State and KwaZulu-Natal to determine how aphid pressure is affected by climate To be able to notify seed growers when aphid pressure increases so that they can act timeously	No aphids were observed in winter in the Koue Bokkeveld (Ceres). In January, aphid numbers were normal, however In the Sandveld, the relationship between the occurrence of rain and aphid numbers was once again observed. The absence of good rainfall during the winter resulted in high numbers of aphids
PRODUCTION METHODS & FERTILISATION	Fertiliser guidelines for two new cultivars	To determine the optimal levels of N and K for two cultivars To determine how the N:K ratio affects tuber quality	The highest yields were obtained at 230 – 300 kg/ha of both N and K N and K levels should be applied at a ratio of 0.7 - 1.0) SG was reduced by high levels of N. High levels of N (300 kg/ha) lead to large, unmarketable tubers
	Volunteer control	To test different herbicides for their effectiveness in the pre-emergence control of volunteer potatoes	Cultivars vary in sensitivity to different herbicide treatments and this points to the fact that each cultivar will have to be tested for suitable treatments Application of metham sodium-controlled volunteers of two cultivars, but not the third Results of glasshouse trials will be tested in field trials

	PROJECT	OBJECTIVES	PROGRESS AND HIGHLIGHTS
SOIL-BORNE DISEASES	Integrated management of root-knot nematodes	To develop a strategy to decrease the populations of *Meloidogyne* during potato production	Field trials indicated that nematodes are determined to a large extent by the type of crop grown.
	Evaluation of cultivars for tolerance against soil-borne pathogens	To evaluate the tolerance of commercially grown cultivars against root-knot nematodes, *Spongospora subterannea* f.sp. *subterannea* causing powdery scab, *Streptomyces* species causing common scab, and *Pectobacterium* species causing black stem and soft rot	In field trials, no cultivar tested was tolerant to nematodes Ten cultivars were evaluated for tolerance to *Pectobacterium* species. Preliminary results indicated that BP1 and Sifra are tolerant, and Mondial and Valor are susceptible Field and glasshouse trials identified cultivars tolerant and susceptible to *Spongospora subterannea* f.sp. *subterannea*. Field and glasshouse trials identified cultivars tolerant and susceptible to *Streptomyces* species.
KNOWLEDGE TRANSFER	Development of fact sheets	To revise existing fact sheets and to develop new ones as the needs arises	Two new fact sheets were developed and are available in Afrikaans and English Two booklets were compiled and published.
	Courses	To develop courses for potato farmers	Courses on Irrigation Scheduling were arranged in five regions (Vivo, Mpumalanga, Eastern Free State, Kwazulu-Natal and North-Eastern Cape)
	Research Symposium	To create a platform where researchers and potato workgroups can report their results to the industry	The Symposium was held at Klein Kariba, Limpopo, and was attended by 170 individuals from different sectors of the industry.
WATER	Groundwater monitoring in the Sandveld	To determine whether the use of borehole water for potato production impacts on the groundwater level in the Sandveld	Monitoring at the beginning of 2017 showed that the water level of boreholes dropped by an average of 0.6m and the conductivity increased by 29 Ms/m when compared to data of the previous year. This is ascribed to the ongoing drought in the Western Cape
	The water footprint of potatoes	To test advanced technology (cosmic ray probes) to make irrigation scheduling easier for farmers	Observations and adaptations over three years led the research team to conclude that the cosmic ray probe is not suitable to use in the irrigation scheduling of potatoes

Research Highlights

Tuta absoluta (Tuta), the tomato leaf miner, was detected in South Africa for the first time in August 2016. *Tuta absoluta* is known for the destructive effect it has on tomatoes in several regions of the world. Tuta is closely related to the potato tuber moth and potato has been listed as an alternative host for *Tuta. absoluta*. There is thus concern about the potential impact of Tuta on potato production in South Africa. Monitoring using pheromone lures in different production regions confirmed that by December 2016, the occurrence of the insect was widespread across South Africa. *T. absoluta* is known to build up resistance against insecticides. Awareness drives in this regard will therefore continue.

The fall army worm (*Spodoptera frugiperda)* entered the country unexpectedly in January 2017. This insect will probably not cause economic damage to potato in South Africa, but since most potato farmers plant maize (the main host plant for the fall army worm) in rotation with potato, the latest news is regularly given to potato farmers. Engagement by Potatoes South Africa with the DAFF ensures that the industry remained informed and prepared for new pests and diseases.

The first phase of the study on conservation tillage on potato in the Sandveld has been completed. Results of the past four seasons indicate that soil health is affected by the type of implement used to prepare the soil before planting. Indicators of soil health (free-living nematodes and soil respiration) improved when soil was loose and well aired compared to compact soil when conventional ploughing was applied. In the second phase of this study, potatoes will be planted in plots planted to potato four years ago. The cover crops will be adapted to those planted currently by farmers.

Research to develop integrated management programmes for soil-borne diseases was initiated three years ago. Projects focused on the relative tolerance of the most popular cultivars against pathogens of common scab, powdery scab, soft rot-black stem and nematodes. In glasshouse and greenhouse trials, tolerant and susceptible cultivars were identified for each disease. Unfortunately,

no cultivar was found to be tolerant to any of the diseases. However, this information will be put to good use in identifying the risk of each disease.

Since the fertiliser guidelines for potatoes currently in use were developed for old cultivars, the question of whether these guidelines are applicable to modern cultivars required investigation. Results of the past three years indicated that the guidelines are still valid, but because the yield of new cultivars is so much higher than the old ones, the amount of fertiliser per hectare increased.

Knowledge Transfer

Potato Research Symposium – July 2016

The Potato Research Symposium (2016) was held on 26 and 27 July at Klein Kariba near Bela-Bela in Limpopo. Scientists reported on the progress made on projects funded by the Potato Industry Development Trust and other institutions, and 30 presentations were made. Potato workgroups reported on 13 cultivar trials that were carried out in 11 regions. Postgraduate bursary holders made eight presentations.

The symposium was attended by 170 individuals, including potato producers, representatives of input suppliers, students and researchers. Dr Mike Storey (UK Potato Council) gave an overview of research management for the horticultural industry in the UK. Dr Ben Pieterse (McCain) gave his impression of the effects of and lessons learned during the drought of 2015/16.

Awards were presented to the following people: Prof. Lucy Moleleki received the award for the best presentation by a researcher for her presentation, '*Screening of soft rot tolerance in potato cultivars*'. Ms Carmen Muller received the prize for the best student presentation and Mr Pieter Brink (Chairperson: Sandveld Potato Workgroup) received an award for his report on the cultivar evaluation trial at Aurora in the Sandveld. The best potato workgroup represented was the Sandveld.

CHIPS articles

During the year under review, 15 technical articles and 12 potato workgroup reports were published in CHIPS and all are available on the website (www.potatoes.co.za/research/chips-articles).

Final reports

Three final reports were completed and are available on the website (www.potatoes.co.za/research/final-reports):

1. Resource use efficiencies and risks associated with potato production in South Africa
2. Inclusion of PCR methodology in the potato laboratory services' procedural identification of *Ralstonia solanacearum*
3. Investigations into integrated control strategies for the potato tuber moth

Courses and Workshops

1. Irrigation scheduling: The two-day course was presented in five different regions in 2016/2017 and was attended by 55 persons.

Fact sheets

1. The following fact sheets were compiled:
   - Alternaria diseases
   - Post-harvest loss
2. A handbook, Description of 16 potato pests in South Africa
3. A publication of CHIPS articles on volunteer potatoes/ opslagaartappels

Printed copies of the fact sheets are available at Potatoes South Africa's head office and regional offices and are also electronically available on the Potatoes South Africa website (www.potatoes.co.za/research/fact-sheets).

MARKETING DIVISION

The marketing division of PSA has two pillars. The first pillar, Generic Product Promotion (GPP) entails projects aimed at stimulating demand in the local market through classical product promotion mix elements of above-the-line advertising, Public Relations, and digital marketing. The primary target audience for all GPP initiatives is identified as consumers in the middle-income group residing in urban South Africa. Given the ever-growing size of this segment, there is no doubt, this market presents a treasure trove of golden opportunities to take advantage of.

The second pillar, Market Access and Development (MAD) endeavours to expand the total market for potatoes through market development and market penetration strategies.

The potato industry embodies principles of a free market. By virtue hereof, prices within the industry are determined through the interaction of supply and demand. In light of this, it continues to be the mandate of PSA (NPO) Marketing Division, to ensure that the promise made to the end consumer in respect of the product attributes and benefits is not only defined by price but value for money.

Potatoes in their natural form hold strong nutritional value. When prepared correctly, i.e. baked, boiled or grilled and healthily consumed, potatoes can deliver daily vitamins and mineral intake such as potassium, chromium and fibre.

Marketing Committee

Refer to table 13 below for the Marketing Committee during the year under review.

Table 13: Marketing Committee

NAME	REPRESENTING
Mr Rudi Heinlein	Chairperson, Northern Region (Limpopo)
Mr Joos Engelbrecht	Vice Chairperson Southern Region (Sandveld, Eastern Cape, Ceres, Southern Cape and South-Western Cape)
Mr Mike Green	Eastern Region (KwaZulu-Natal, Eastern Free State, North Eastern Cape)
Mr Nicolaas Lourens	Eastern Region (KwaZulu-Natal, Eastern Free State, North-Eastern Cape)
Mr Johan van den Heever	Northern Region (Mpumulanga, Gauteng, Loskop Valley)
Mr Werner du Plessis	Western Region North-Western Cape, Northern Cape, Western Free State, South-Western Free State)
Mr Tiekie de Kock	Chairperson: National Seed Potato Committee
Mr Deon van Zyl	Institute of Market Agents South Africa (IMASA) Alternative: Mike Cordes
Ms Tutti Rudman	South African National Consumer Union (SANCU)
Me Mathilda van der Walt	National Agricultural Marketing Council (NAMC)
Vacant	Potato Industry Development Trust (PIDT)
Mr Elvis Nakana	Department of Agriculture, Forestry and Fisheries (DAFF)
Mr Mothlanke Tladi	SA Informal Traders Association (SAITA)
Mr André Young	SA Union of Food Markets (SAUFM)
Ms Francina Makhoane	Consumer Goods Council of South Africa (CGCSA)
Vacant	Processing Forum

Generic Product Promotion (GPP)

During the 2016/2017 financial year, the implementation of a new strategic direction for the local generic product promotion of potatoes was introduced. There was a move away from sales promotions, personal marketing and trade shows to television, radio and print media campaigns, supported by social media and public relations. The strategy used is to reach targeted consumer segments in a way that impresses. The logic behind the strategy is to encourage the increased purchase of potatoes across all supply chains.

The slogan under which all campaigns were carried out was: Classic Goodness of the Earth.

Why CLASSIC goodness?

Fresh potatoes have been with human kind for over 16 000 years, and have remained one of the world's most loved foods. The intrinsic value of potatoes may somewhat be

forgotten by many due to familiarity. This new revamped strategy aimed to reposition potatoes as a perfect and suitable carb replacement, whilst also advocating it as the number one vegetable. At the heart of the strategy was a need to rekindle a love for potatoes, remind about the role potatoes play in the global food system, and restore the product's reputation as a healthy, nutrient dense and wholesome food. Key messages communicated through GPP campaigns were:

- Potatoes are multifaceted - able to adapt or be adapted to many different cooking purposes and occasions
- Potatoes are undemanding – can produce the most scrumptious of meals without much effort, thereby posing few preparation difficulties
- Potatoes are packed with nutrients – baked, boiled or grilled potatoes produce the highest content of nutrients than meets the eye, it's not the potato… it is how it is prepared and consumed!
- Potatoes are high in carbohydrates– potatoes have a very high carbohydrate content. Carbohydrates are the body's fuel for energy. Energy provides vitality.

Generic Product Promotion Action Agenda

The concept #WTP (Where's the potato) was introduced in August 2016. "WTP" is a play on the commonly used acronym of "WTF". The concept sought to leverage the acronym in the context of potatoes, creating an engaging, fun and modern way of connecting with consumers. The strategy followed the AIDA (Attention, Interest, Desire, Action) advertising and marketing model through a three-pronged approach that sought to ask three questions:

1. #WTP: Where's the potato? This question brilliantly captured attention and arouse interest through the launch of an above the line advertising campaign which showcased classic meals that go well with potatoes, but, without the potato. The campaign was able to raise heightened awareness about potatoes being a true classic goodness product that completes meals such as Fish & _____?

2. In the latter part of 2016, the second phase of the campaign was launched with a question posed to South Africans, #WTP: Why the potato? To create a favourable disposition towards the product, a strong case was built through educational pieces backed by science, input from health professionals and recipes developed by professional chefs and foodies. This gave rise to PSA's following on social media and traffic to the consumer website.

3. The last leg of the #WTP concept was implemented in May 2017 in an attempt to provide the true DNA of potatoes and trigger increased per capita consumption.

This was a successful TV campaign with #WTP broadcasts over SABC's most popular programs and channels, bringing more than 60 million viewers within LSM 3-7, according to eTelmar, Post Campaign and Tams.

To announce the #WTP campaign over the radio in September 2016, the SABC's African language stations were used over a two-week period. To ensure that the radio campaign was targeted at representative target audiences, a shift was made to Metro FM with the second and third editions of #WTP, which went on air in May and June 2017. Based on the reported listening scores of the different stations and prospective broadcasts, with a combined audience of almost 30 million the radio campaign seems to be a resounding success.

The radio and television campaigns are supported by magazine advertisements to strengthen the communicated messages and to ensure that all promotional platforms are integrated, work together and are in harmony.

Snapshot of other Project Successes

A number of projects were developed in the year under review aimed at addressing critical areas of growth and development under GPP and MAD. For GPP campaigns it remains highly important to ensure a continuous flow of current, superior and factual content. As such, the division worked closely with health professionals, chefs, media and advertising agencies to bring to life the positive attributes of the product in a practical fashion.

Health & Nutrition

All nutritional pieces, presentations and demonstrations were carried out in close working with registered dieticians, professional chefs and thought leaders in health and nutrition. A desktop study that was aggressively driven through PR and social media is titled: **Healthy Eating Habits to Manage Cardiovascular Disease:** *Key Nutrition Factors in the management of Cardiovascular Disease*. It proved to be useful in positioning potatoes as a heart healthy product. An angle that will be explored further in 2017/18 through the Heart and Stroke Foundation of South Africa.

Recipe Development

South Africa's finest chefs were brought on board to develop classic yet contemporary potato recipes currently published on the consumer website (www.potatonation.co.za) under interesting headings such as Heart Healthy Bites, Snack-Attack, and Hot meals to name but a few. The recipes were designed to showcase preparation convenience, nutrition,

product versatility and value for money. The recipes have also proven to be a great source of conversation and engagement on social media.

As part of growing the recipe bank, Potatoes South Africa hosted the first ever Spud Master Challenge with the Capital Hotel School. An exciting initiative with student chefs that has afforded the organisation re-establish its relationship with cooking schools and connecting with the youth through a cooking competition that inspired and rewarded aspiring chefs for showing innovative spud inspired meals.

Public Relations

Various PR interventions were carried out during the course of the year under review. The value of both incidental and internally driven coverage was estimated at R4 million on 30 June 2017 with December 2016 and June 2017 campaigns leading the pack in free media exposure at R312 660.66 and R351 831.24 respectively.

Social Media / Digital Marketing

With social media gaining strength as a formidable advertising tool, the main objective for the financial year under review was to ensure that all established social media platforms (Facebook, Twitter and Instagram) amplify efforts taken to promote potatoes to the end consumer by posting superior content that will contribute towards:

1. Building and growing a Potato Nation social community;
2. Strengthening the product's social currency; and
3. Building brand/product utility.

All social media platforms served as an important educational channel in the 2016/17 Financial Year. Though the following has remained steady and unchanged, the level and degree of engagement with our 54 000 strong followers has intensified.

MARKET ACCESS AND DEVELOPMENT

For the 2016/2017 financial year it became evident that the environment within which producers are operating is becoming tougher due to uncontrollable forces such as erratic weather conditions, weakening currency, political instability as well as the ever-evolving face of the consumer. The 21st century consumer is more knowledgeable, wiser and has quicker access to information than ever before. This has propelled the marketing division to interrogate issues of quality through the eyes of the consumer, market activities nationally through Project Rebirth as well as trade issues aimed at protecting the local industry whilst also establishing improved standards of trade in- and out-side the Republic of South Africa.

Food Safety and Quality Assurance

The sale of potatoes (locally and/or in foreign markets) is governed by the Agricultural Product Standards Act 119 of 1990. In recent times, the classing, packing, marking and labelling of potatoes have come under close scrutiny requiring for the Marketing Division to revisit the Agricultural Product Standards Act 119 of 1990 for relevance and possible modifications. In the 2016/2017 financial year, PSA initiated a process of harmonising local and export potato standards. The project is on-going and looks at the below encapsulated aspects of the Act:

- Standards Act definitions;
- Potato Classification;
- Potato Marking Requirements;
- Potato Packaging Requirements;
- Potato Palletisation Requirements;
- Potato Weight Loss;
- Quality Index

Many changes have taken place in the last decade and a half, including potato varieties, the size of potatoes and yet standards promulgated close to three decades ago have not been scrutinised for relevance. The Harmonisation of Potato Standards is a project that will seek to ensure relevance to achieve adherence.

Rebirth of National Fresh Produce Markets

The Codes of Best Practice (CoBP) for National Fresh Produce Markets (NFPMs) was designed after it became apparent that several national fresh produce markets were operating ineffectively. Pillars identified as highly critical in improving efficiency and operations of NFPMs are:

- Human Capital Development
- Consignment Control
- Risk & Financial Management
- Infrastructure

Though great strides have been made since the launch of the CoBP to reengineer and improve the operations of ailing markets, it is noticeable that some markets are struggling to comply to the practices. With this in mind, Potatoes South Africa's involvement will intensify moving forward as the potatoes increasingly adds value to the sector and GDP. It is the view of Potatoes South Africa that failure in operations of one market is one too much.

Failure in operations of one market could have unintended socio-economic ramifications to the industry. The project will continue into the new financial year with a much more aggressive approach.

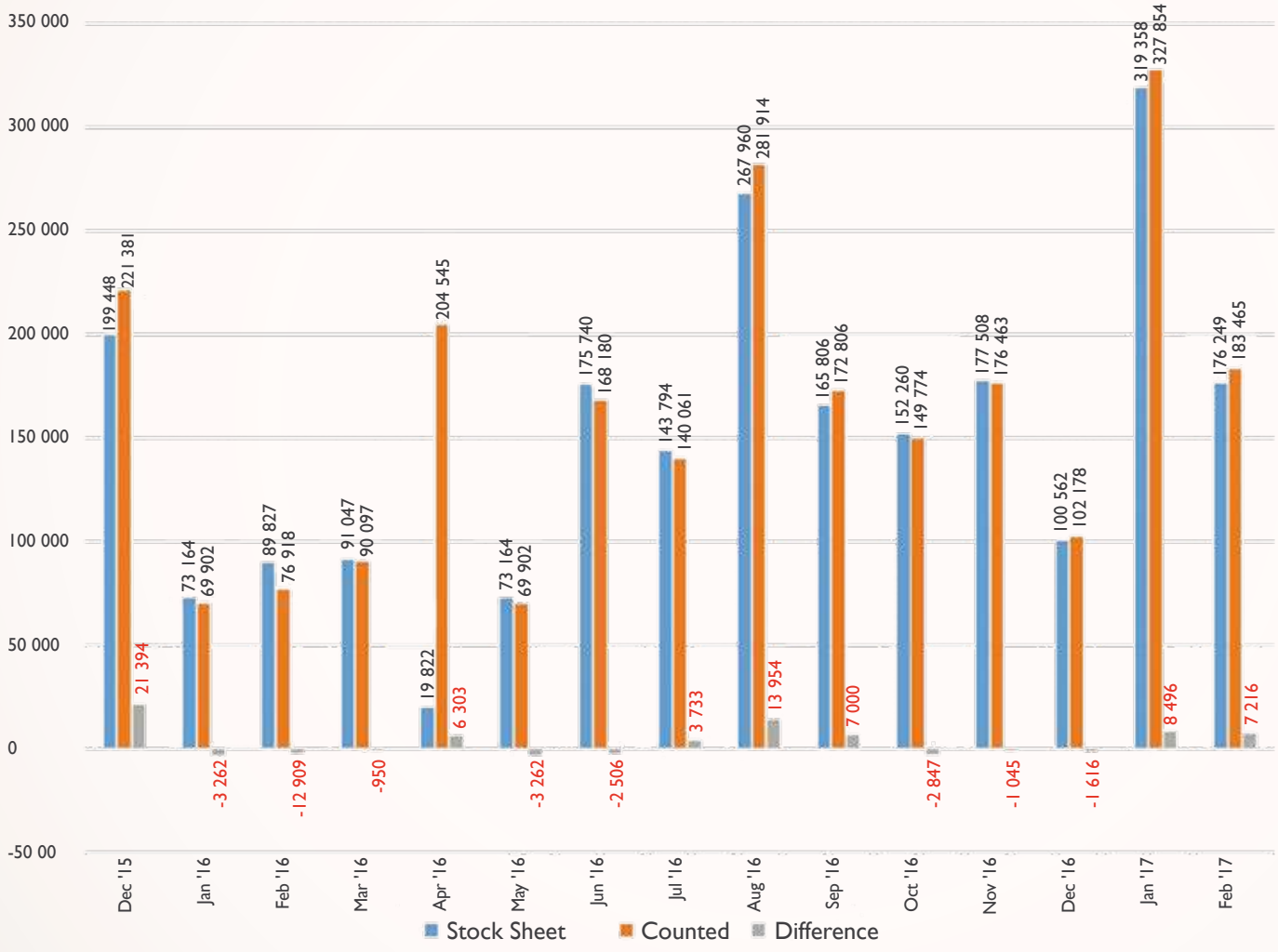
Potato Stock Audits

Agricultural Produce Agents Council (APAC) carries out stock audits on fresh produce market floors to:

- Increase transparency of the market environment;
- Realise true market value, determined on a level playing field and in accordance with the required rules and regulations; and
- Detect & prevent any potential financial risk to the producer on time.

Potatoes South Africa in close working with APAC have managed to reduce discrepancies on the stock sheet as depicted in the graph below:

Figure 9: APAC Stock Audits



Such interventions are carried out to protect producers from unethical agent/agency operations that could lead to financial losses for the producer.

SANS 1756: A New Paper Specification for Potato Packaging

Good packaging protects the product from wetting, hitting and bruising. Potatoes South Africa together with paper manufacturers proposed a new paper specification for potato packaging to the South African Bureau of Standards (SABS). The new specification has been approved by industry. At the time of compiling the report the draft document was awaiting public comments scheduled to close in August 2017. Should there be no objections from the public, the new specification will be enacted.

Foreign Market Expansion Strategy

To develop a sustainable, growing and thriving South African potato industry requires strong market expansion also referred to as market development. DAFF and specifically the Directorate: International Trade, completed a study that explored export opportunities for vegetables to Africa. The aim of the study is to eventually develop an African strategy for the South African vegetable sector. PSA and the Produce Marketing Association have worked closely with DAFF to hold an industry-wide workshop to discuss the results of the study. The joint study objectives are formulated as follows:

1. To identify priority export markets by product and country – where there are opportunities;
2. To identify production expansion opportunities linked to jobs, water usage & geographical aerial mapping;
3. To gain a better understanding of the role value adding and processing play;
4. To get producers export ready in order to contribute to the country's 2030 job creation targets; and
5. To match production data on the geospatial information system (GIS) – where possible.

When the year under review concluded, PSA was in the process of determining whether such a study cannot be customized for the potato industry so that the results are much more reflective of the real opportunities to be taken advantage of.

TRANSFORMATION

The purpose of the Transformation core business within PSA is to ensure the development of new black producers who are interested in becoming commercial producers. It also aims to address food security by engaging with rural communities and helping them through demonstration fields where they are taught to plant potatoes economically for consumption.

PSA has been involved in transformation projects over the last few years, and progress is increasingly observed. The number of hectares of potatoes planted (with support from PSA) by black producers is increasing, and there are producers already identified with the potential to farm commercially.

During the year under review, PSA focused on the following transformation projects:

- Business Development
- Small Farmer Development
- Tertiary Skills Pipeline
- Farm Based Training
- Commodity Projects Allocation Committee (CPAC) in the Western Cape

Transformation Committee

Refer to table 14 below for the Transformation Committee during the year under review.

Table 14: Transformation Committee

NAME	REPRESENTING
Mr Bernhardt du Toit	Chairperson
Mr Joseph Bantom	Southern District
Mr Siseko Vikilahle	South Eastern District
Mr Shadrack Mabuza (PIDT)	Eastern District
Mr Gift Mafuleka	Central District
Mr Gary Vorster	Potato Producer (appointed by the National Council of PSA (Voluntary))
Vacant	Seed input supplier (as nominated by the National Seed Growers Committee)
Mr BM Mpyana	National Agricultural Marketing Council (NAMC)
Vacant	Potato Industry Development Trust (PIDT)
Mr Adam Mostert (Retired)	Fertiliser Association of South Africa (FERTASA)
Mr Nomfundo Mthimunye	Association of Veterinary and Crop Associations of South Africa (AVCASA)
Vacant	Processors (Crisp sub-sector)
Mr Riaan Smit	Processors (French Fry sub-sector)
Mr Stanford Manthata	Department of Agriculture, Forestry and Fisheries (DAFF)

Enterprise Development

During the 2016/2017 financial year, over R5 million was used towards the Enterprise Development Programme whose goal is to assist in setting up, supporting and growing viable new black owned potato producing enterprises while the objectives are:

- To develop an economic programme that is aimed at sustainable potato production by small holder farmers in order to utilise available land and assist to optimise the maximum benefit of an integrated production system.
- To develop small holder farmers to grow and produce commercially in a sustainable way.

Through the Enterprise Development Programme, PSA has been supporting new black commercial farmers for the past seven years. The initial engagement with the farmers was that PSA will 1) provide seed of between 3 and 5 ha, 2) provide training where necessary, 3) provide technical support and 4) expose the farmer to the industry through the new farmer induction initiative. Linked to budget availability, PSA also committed to supporting 6 farmers per year for 4 years on a sliding scale basis (Y1 = 100%, Y2 = 75%, Y3 = 50%, Y4 = 25%).

Based on the support model described above, there were a number of challenges that farmers experienced; the major one being access to finance and machinery. The mechanics of the model above imply that all farmers participating in the Enterprise Development Programme will need to have own funding for chemicals, fertilizer, labour and also access to machinery. Over and above this, they still had to contribute towards their seed cost as the years progressed. Lack of own finance to produce potatoes profitably and in a sustainable manner resulted in the following:

- As the farmers progressed in the programme, the number of hectares decreased. They only had access to seed which was contributed by PSA and seldom made the contribution towards seed cost as per the requirement of the programme.

- The tonnage produced by these farmers was not on par with their commercial counterparts and this could be attributed, amongst others, to insufficient fertilizer and chemicals being applied.
- The farming venture not being sustainable due to a lack of technical expertise in potato production.

The above necessitated PSA to adapt the programme by focusing on the expansion of hectares of existing farmers.

Expansion of existing farmers

The Enterprise Development Programme has seen a big increase in terms of the scale that the farmers are operating on. During this financial year, the focus was on expanding the hectares of the farmers that are currently on the programme. The end goal of the Enterprise Development Programme is to see the participating farmers operating at a commercial level and hence the expansion of hectares under production of the existing farmers.

Thorough assessments were made in selecting farmers for expansion. It requires that a farmer has access to enough land and also to be able to pay the co-funding required, for them to be considered for expansion. Four (4) Limpopo farmers were expanded with one farmer being taken up to 25 ha while he is doing an additional 30 ha on his own. In the Gauteng area, PSA was able to expand one farmer from 10 ha to 15 ha. All these ventures have proven to be a success.

Linkages with other role-players

A lot of effort and time has been put in ensuring linkages with other role-players in the industry. PSA has been working very hard to forge partnerships with different organisations that can play a role in making the Enterprise Development Programme sustainable. Farmers are only receiving support in terms of seed, training and mentorship and these linkages will allow them to have access to the other resources required.

PSA entered into partnership with NTK in the Limpopo area and successfully sourced funding from the Jobs Fund. Four (4) farmers are benefiting from the funds received from the Jobs Fund. NTK is fully involved in the implementation of these projects and all these farmers have access to all the resources required. The relationship with NTK has also opened doors for most farmers in Limpopo as they can now access inputs on credit from NTK if required. This has been a big challenge in the past where farmers struggled to obtain credit, which in turn impacted negatively on their sustainability.

Welkom farmers in the Free State have also benefited from the linkages that PSA has with the Free State Department of Agriculture, Forestry and Fisheries (DAFF). PSA provided seed support only and DAFF assisted the farmers with chemicals, fertiliser and machinery. DAFF also boosted the farmers' contribution towards their seed cost. This contribution was welcomed by the farmers who were not able to plant during the previous season due to drought experienced in the area.

Small Grower Development Programme

The Small Grower Development Programme involves communities who plant potatoes mainly for food security with the remaining crop sold to the immediate community. The main goals of the Small Grower Development programme are:

- To disseminate production and business information through trials.
- To provide farmers with practical training on good potato production practices.
- To utilize cultivar or demonstration trials as a way of educating, training and disseminating important production information necessary for successful potato production.

An amount of R233 000 was spent towards Small Grower Development in KwaZulu-Natal, Eastern Cape and the Western Cape. The Small Grower Development Programme receives strong support from DAFF in these provinces. Seventeen (17) projects were supported during the year under review and each Information Day was attended by an average of 60 people, making the total number of extended beneficiaries to over a thousand (1000).

Tertiary Skills Development Pipeline

The PIDT annually awards bursaries to deserving students studying towards an agricultural related qualification with the emphasis on the potato production. The undergraduate bursary programme is primarily aimed at developing the skills of young talented students at existing potato enterprises. Their development is done through tertiary education at universities and agricultural colleges.

The postgraduate bursary programme, on the other hand, is aimed at making a contribution towards ensuring that there are enough postgraduates to address the relevant research areas affecting the industry as well as increasing the industry's pool of appropriate qualified scientists. The Research and Development Core Business, together with the Transformation Core Business, are jointly responsible for funding and identification of the postgraduate

students. The Technology and Human Resources for Industry Program (THRIP), a joint flagship research and development programme of the Department of Trade and Industry and the National Research Foundation (NRF), has contributed R1 million to the Tertiary Skills Development Programme over three years. In addition, the success of the programme has also led to a boost in the funding of R750 000 by AgriSETA for bursaries.

During 2016/2017, the following bursaries were awarded to students at different institutions throughout South Africa:

Table 15: Undergraduate students (New Students 2017)

	Name	Field of Study	Institution
1	Mr Thato Taele	National Diploma: Agricultural Management	Central University of Technology, Free State
2	Ms Tumediso Frumentia Mapudi	National Diploma Agriculture: Crop Production	Tshwane University of Technology
3	Ms Thato Friedah Somo	Diploma in Agriculture: Mixed Farming	Potchefstroom College of Agriculture
4	Ms Welile Mlando Dlamini	BSc in Agriculture: Agronomy	University of Zululand
5	Ms Jabulile Nxumalo	BSc in Agriculture: Agronomy	University of Zululand
6	Ms Mahlatse Motlanthi	BSc in Agriculture: Soil Science	University of Limpopo
7	Ms Sinovuyo Magwebu	BSc in Agriculture: Crops - Horticulture	University of Fort Hare

Table 16: Current students (2016 and earlier)

	Name	Field of Study	Institution
1	Ms Kamogelo Eugina Leburu	National Diploma: Agricultural Management	Central University of Technology, Free State
2	Ms Mamotshabo Malebogo Rachel Rakgwale	National Diploma: Agricultural Management	Central University of Technology, Free State
3	Mr Sthembiso Cele	National Diploma in Agriculture: Plant Production	Mangosuthu University of Technology
4	Ms Zama Siyethemba Nyathi	National Diploma in Agriculture	Mangosuthu University of Technology
5	Mr Thabo Emmanuel Thomas Thubane	Diploma in Agriculture: Mixed Farming	Potchefstroom College of Agriculture
6	Mr Kgolofelo Clifford Moshiana	Diploma in Agriculture: Mixed Farming	Potchefstroom College of Agriculture
7	Ms Lavhelani Tshilongo	Diploma in Agriculture: Mixed Farming	Potchefstroom College of Agriculture
8	Mr Ofentje Khaphola	National Diploma: Agricultural Management	University of Mpumalanga
9	Mr Kemi Kgaume Makonko	National Diploma: Plant Production	University of Mpumalanga
10	Ms Rebotile Sophy Thaba	BSc Agric: Soil science	University of Venda
11	Mr Xolani Hlatswayo	BSc Agric: Agronomy	University of Zululand
12	Mr Loyola Gauzela	BSc Agriculture: 4-year degree	University of Zululand
13	Mr Mhlengi Sboniso Khambule	BSc Agriculture	University of Zululand

Postgraduate students

Table 17: Postgraduate students (2017)

	Name	Institution	Field of Study	Year of Study
1	Mrs Carmen Muller (nee van Niekerk)	University of Pretoria	PhD: Nutrition	PhD 2
2	Ms Nikki Miguel	University of Pretoria	MSc Microbiology	Masters 1
3	Mr Alessandro Rino Gricia	University of Pretoria	MSc Microbiology	Masters 1
4	Mr Xola Ngceni	University of Fort Hare	BSc Agriculture Honours: Crop Science	Honours
5	Mr Innocent Noah Mazibko	Tshwane University of Technology	M-Tech Agriculture	Masters 2
6	Ms Kgothatso Andronicah Chauke	Tshwane University of Technology	M-Tech Biotechnology	Masters 1
7	Mr Tlangelani Nghondzweni	Tshwane University of Technology	D-Tech Agriculture	PhD 2
8	Mr Sifiso Njabulo Mhlongo	University of Kwazulu-Natal	MSc Agric: Crop Science	Masters 1

Table 18: Postgraduate students (2016 and earlier)

	Name	Institution	Field of Study	Year of Study
1	Ms Ntombikayise Precious Nkomo	University of Pretoria	Plant Pathology and Microbiology	PhD 2
2	Mr Stefan Priem	University of Pretoria	BSc Microbiology	Masters 3
3	Ms Lutendo Nally Muelelwa	University of the Free State	MSc Agro Meteorology	Masters 3
4	Mr Present Sikhulile Gininda	North West University	MSc Agriculture Economics	Masters 3

Internships and workplace experience

The Internship Programme is primarily aimed at providing experiential training opportunities to bursary recipients whose study disciplines require practical training and exposure as part of their qualification. The workplace programme is aimed at providing students with the opportunity to obtain workplace experience to enhance their employment opportunities. PSA received an additional amount of R180 000 towards the Internship Programme. The following students were placed on an internship programme:

Table 19: Students on internship programmes

	Name	Internship	Previous employer
1	Ms Dimakatso Moiloa	Prokon - Pretoria	Potato Seed Production
2	Mr Ndzudzeni Madia	Prokon - Pretoria	Potato Seed Production
3	Mr Thabo Emmanuel Thomas Thubane	Calby Farming	1st year internship
4	Mr Kgolofelo Clifford Moshiana	Potato Seed Production	1st year internship
5	Ms Lavhelani Tshilongo	Potato Seed Production	1st year internship
6	Mr Sthembiso Cele	Potato Seed Production	1st year internship
7	Mr Kemi Kgaume Makonko	Potato Seed Production	1st year internship

Farm Based Training

Enterprise Development

Following the skills audit conducted in 2014/2015, which highlighted some skills shortages/gaps amongst the Enterprise Development farmers, financial management training took place in the following provinces:

- KwaZulu-Natal
- Eastern Cape
- Limpopo

The training was well received by farmers based on the review of the course that was done through an evaluation form. Farmers indicated that they have a need to receive this type of training in the form of refresher courses. They also indicated that they still require further training in terms of other aspects of the farming business to ensure that their business venture is a success.

Training of commercial farmers' employees

PSA, through its Transformation Core Business, continued to partner with AgriSETA to ensure that employees of commercial farmers receive training. An amount of R500 000 was received from AgriSETA and was utilised in the different regions for the following training courses:

- Forklift operator
- Forklift refresher
- Health and safety
- Leadership for hope

AgriSETA once again approved an amount of R499 575.00 for the 2017/2018 financial year. Regional Managers will assist in rolling out the training in the regions they are operating in.

Commodity Project Allocation Committee in the Western Cape

PSA continues to play a leading role in the vegetable Commodity Project Allocation Committee (CPAC) which is the initiative of DAFF in the Western Cape. The main role of this committee is to allocate the grant funding to vegetable projects that meet the set criteria. During the year under review, R10 million was distributed to qualifying vegetable projects through this committee. The involvement of the commercial potato farmers has been valuable as they bring practical experience which assist in decision making and approval of funding.

INDUSTRY SERVICES

PSA's Department: Industry Services is responsible for providing a comprehensive regional-based service to potato producers. Industry Services not only serves as the link for two-way communication between potato producers and PSA, but also functions as an extension of PSA's core business units. The five regional offices which are strategically placed provided the following relevant services to the 16 production regions:

- Farm visits
- Market Visits
- Impact measuring visits (IRD)
- Meetings / Information days
- Meetings attendance

Regional Services

During the period under review, the regional offices were responsible for establishing and maintaining the necessary structures and platforms at regional level. These include all meetings of the regional and subregional managements and potato workgroups, as well as farmer days, information days and research days, which serve as platforms for potato producers and other role players to meet, discuss matters of common interest, share information and to take decisions on matters of regional and national importance. The regional personnel serve as an extension of PSA's core businesses in terms of executing the core businessrelated activities in the potato production regions with the emphasis on communication and technology transfer. In addition to producer meetings, personal visits to producers are an important part of the service delivery by regional personnel members. Meetings with producers not only provide the opportunity to verify the accuracy of production statistics, but also allow for the following:

- Conveying information on production and market trends, used by producers in the planning of their planting, harvesting and marketing strategies.
- Providing technical support, regarding matters such as problems relating to pests and diseases, as well as through the support with mechanical damage by using the IRD.
- Feedback on the core business and general activities of PSA, as well as liaison at government level.
- Identifying producers' needs in terms of regional and national affairs, with a view to refer such matters to the regional management committees and, if necessary, to the PSA Board of Directors.
- Promoting the image of PSA to other industries in the supply chain as well as cooperation with other agricultural products supply companies.
- Handling of enquiries and problems experienced by producers, other role players in the various production regions and the Department of Agriculture, Forestry and Fisheries.

Core Business Support Service

Industry information

With regard to industry information, regional personnel are responsible for gathering production statistics in the various production regions for inclusion in the phase reports. This information is converted into business intelligence and conveyed to the industry in the form of market trends, such as fortnightly crop estimates and monthly newsletters, which contribute towards a sustainable farming environment. Crop estimates were of a high standard and deviations were consequently minimal.

Market development and product promotion

A key function of the regional personnel is to visit and interact with the national fresh produce markets, private markets, wholesalers, pre-packers, retailers and the processors within their respective production regions.

Market visits

During the year under review the following matters were addressed:

- Communicating production and market trends.
- Resolving complaints and problems.
- Monitoring the quality of producers' products.
- Conducting quality and stock control, if necessary.
- Monitoring the general condition and neatness of markets and discussing it with markets agents and management.

Refocus on liaison with the National Fresh Produce Markets

The aim is to liaise with market authorities and agents on a regular basis in order to address production and marketing matters and the needs of producers. Market floors were visited in order to:

- Conduct audits in conjunction with market authorities.
- Monitor supply movements, sales and price setting in conjunction with market authorities.
- Ensure that potatoes deemed unfit for human consumption, were handled in accordance with the

prescribed regulations and procedures.

- Ensure that potatoes lost due to theft and other losses are handled in accordance with the appropriate market system regulations.
- Ensure that producers' queries in respect of the above matters are addressed in a professional manner, in conjunction with market authorities and market agents.
- Provide feedback to producers on their products through goal orientated market visits where photos are taken of the produce and then presented to the producers.

Information-, Marketing- and Promotion Days

The regional offices were closely involved in product promotion through agricultural shows, promotional days, media articles and media liaison, as well as via liaison with various partners in the potato value chain. Events included the Vivo Farmers' Day, the Sandveld Information Days, the Eastern Free State Information Day, and the Ceres Soccer Tournament. A publicity article on potato production in the Sandveld was also published in the Landbouburger.

Transformation

Regional Offices visited emerging farmers to provide assistance and training and mentorship. Attention is also given to farm worker training in various production regions. Producers are assisted by organising of training as well as venues for the following courses, amongst others:

- Forklift training
- Health and safety
- Safety awareness

Research

Regional research is conducted by 12 potato workgroups at regional level with producers to ensure that purposeful independent farm based research is conducted which has an important influence on each production region to determine which cultivars are best adapted to the regional climate and needs. There are Potato Work Groups in the following regions:

- Sandveld
- Ceres
- Northern Cape
- South Western Free State
- Limpopo
- Loskop Valley
- Mpumalanga
- KwaZulu-Natal
- Eastern Cape
- North Eastern Cape
- Western Free State
- Eastern Free State

In addition, chemical as well as fertilisation trials are conducted to determine each region's optimal needs and to provide the correct information to producers for potato production.

POTATO CERTIFICATION SERVICE

CONTENT

VISION, MISSION AND VALUES

VISION

Potato Certification Service's vision is to play a leadership role in the pursuit of a sustained supply of healthy planting material for the South African potato industry.

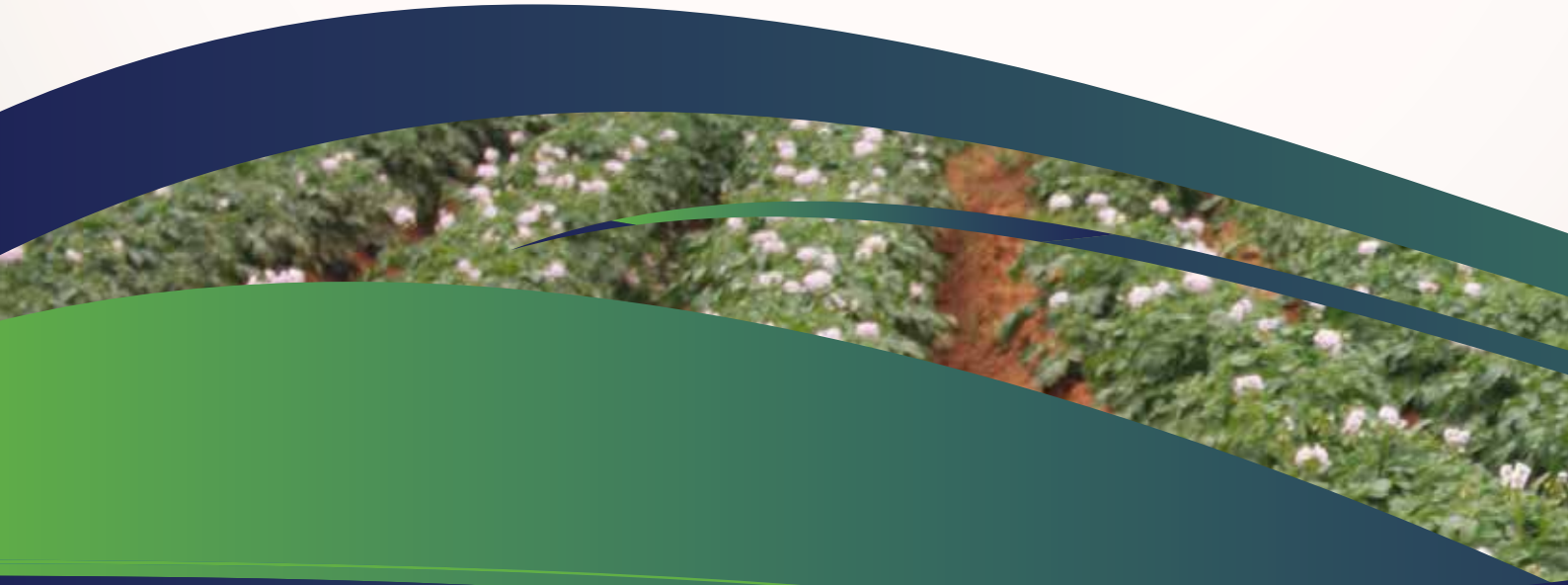
MISSION

Potato Certification Service's mission is to be an industry-related service, which supports the South African potato industry to perform optimally by ensuring the availability of high-quality planting material.

VALUES

Potato Certification Service strives towards excellence by living the following values:

- Client trust and satisfaction
- Effective utilisation of resources
- Equal opportunities
- Performance orientation



REPORT OF THE CHAIRMAN

GERHARD POSTHUMUS

Potato Certification Service (PCS) had a good year with a few highlights that stand out.

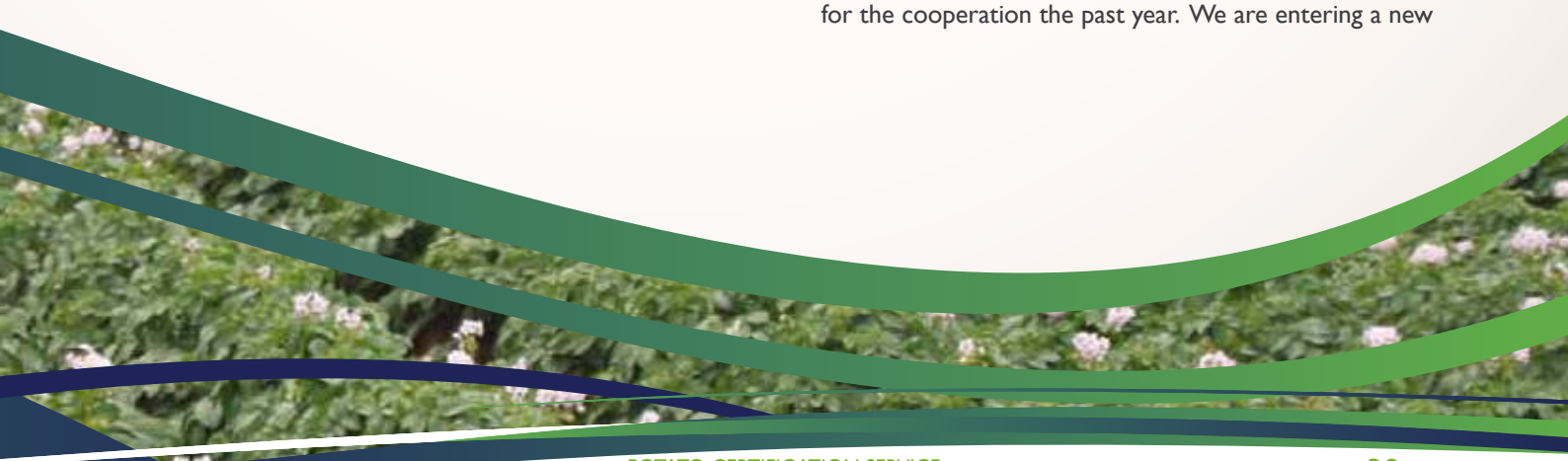
Over the past year, a lot of time, energy and money have been spent and passionate discussions held to review the industry's structures and the South African Seed Potato Certification Scheme (Scheme), to ensure the seed potato industry keeps pace with change and to determine the way forward for the structures to optimally serve potato producers and other role players.

It has been a little over a year since the ICCSP and PCS corporate governance process began, with wide consultation in the industry. Several workshops were held where an extended task team came up with proposals. Consideration was given to the merger of the authority in terms of the Scheme and its service provider, PCS. Considering the legal implications, a new proposal has been formulated. The outcome of the process is that, as with the Scheme's evaluation a few years ago, the evaluation of operating structures is also necessary from time to time. I am convinced that the proposed structures will improve communication, resulting in mandated inputs and requests, which will bring about buy-in at all levels.

As a non-profit company, it remains a challenge to manage the finances of the company so that it remains affordable to certify seed potatoes. Over the past year, a total of 10 586 hectares were registered under the Scheme, which was 1 277 hectares more than budgeted. Consequently, it led to a surplus which contributed that no increase in the certification tariff was required. Given the value added by certification to your potatoes, approximately R2.88 per bag for certification costs, or 1.5% of the price, is a bargain.

The company has skilled staff who are well trained and capable of inspecting and certifying the 6.5 to 7 million bags of seed potatoes certified annually. The men spend long hours on the road, in the fields and stores to ensure that the seed potatoes that are certified, meet the requirements. In addition, the support of the administrative staff is invaluable. Despite resignations of staff with many years of service, I am grateful to report that all posts are filled and that the company is doing well. Staff, who have been promoted and newly appointed, are progressing well and I am sure we will take certification to the next level.

In respect of my Executive Committee and Co-Directors, I would like to express my special thanks and appreciation for the cooperation the past year. We are entering a new



phase where the board is likely to be much smaller, but taking on their responsibilities with the same commitment and passion. The nomination and appointment of directors for a company like PCS brings great sacrifice and responsibility as you are accountable for the good management of millions of Rands. However, it brings great satisfaction to say that the finances are managed and spent well and responsibly. Thank you again.

My sincere thanks and appreciation also goes to the authority, namely the ICCSP, who appointed PCS as service provider, which is satisfied with our service delivery, as well as the Registrar of the Plant Improvement Act and the rest of the directorates at the Department of Agriculture, Forestry and Fisheries. Please allow me the privilege to make special mention of Dr. Keetch and Les Kügel, as co-chairmen of the ICCSP. Your availability, support and input are greatly appreciated.

I would like to express my thanks and appreciation to Potatoes South Africa (PSA) for the opportunity that PCS had in managing the administration of the seed potato industry for the past decade. Although it was good at that stage, it is time to hand back the administration to PSA. We wish you all the best and success. However, I believe it will bring about greater understanding, buy-in and commitment of the entire industry. Thank you for the difference you make in the industry at various levels.

Last, but not least, thanks to the seed growers who take the interest of the industry to heart and literally do everything you can to produce good quality certified seed potatoes. Good quality plant material is not negotiable in the production of potatoes. You deliver a product of vital importance to food security.

Kind regards

G. Posthumus
Chairperson

REPORT OF THE MANAGING DIRECTOR

SANETTE THIART

Potato Certification Service (PCS) was incorporated on 14 June 1995 as an Article 21 Company without share capital with the first founders as members. The purpose of the company was the certification of agricultural products and, in particular, the certification of seed potatoes. Since then, the Companies Act has been revised and PCS is currently incorporated as a Non-Profit Company without members.

After celebrating 21 years of service delivery to the potato industry, PCS embarked into the future with the theme: "Certify for the Future".

Looking back over 21 years of certification, we know where we are coming from, giving us the insight to sensibly determine the way forward.

Prior to the **establishment** of PCS, the Potato Board and Potato Producers Organization's (PPO) Certification Committee was responsible for the certification of seed potatoes. Dr. Pierre Nortjé was responsible for Certification and Research, with Mr. Gerrie de Jager as Head of Certification under the leadership of Mr. Jerry van Vuuren as Chief Executive Officer of the PPO and later Potatoes South Africa (PSA).

The **Scheme** was developed over time, leading to the South African Seed Potato Certification Scheme (Scheme) to be promulgated under the Plant Improvement Act 1976 (Act No. 53 of 1976) in 1998. An official scheme gives international recognition and credibility to certified seed potatoes and promotes trade between countries. It not only allows for export of seed potatoes, but importing promising varieties with plant breeders' rights is only possible under an official scheme. PCS has the privilege to meet regularly with foreign counterparts, enabling us to compare the Scheme and its application to other schemes.

In June 1997, prior to officiating the scheme, the Minister of Agriculture made it clear that the PPO could not be the **authority** to apply the Scheme, as Potato Seed Production (PSP), where the basic material was produced, belonged to the PPO. The Independent Certification Council for Seed Potatoes (ICCSP) was then designated as the Authority. The ICCSP also received approval from the Minister to use the government logo on its correspondence and certification labels. Mr. Jerry van Vuuren acted as chairman of the first ICCSP meeting, after which Dr. Keetch took over as chairman in February 1998. Although PCS has been appointed as the ICCSP's service provider from the outset, a formal written agreement was first signed on 14 November 2012.

At the inception of the Scheme, the staff and finances were managed by the Agric-Admin Company As a result of an investigation and PSA's financial crisis, the companies in the potato industry unbundled and PCS registered as employer with SARS in 2001 and took over its own staff and finances to make the company completely independent of PSA. During that time, seed potato producers contributed financially by means of loan levies to keep PCS running.

In 1997, consideration was given to the establishment of a **Seed Potato Growers' Forum**. The Forum was then funded by PSA levy money. Due to the gap between the regional seed potato committees and the Forum, the National Seed Potato Committee was founded on 12 June 2001. The National Seed Potato Committee is the

place where seed potato matters are discussed before referring aspects to the various structures. The ICCSP determines policy and is responsible for the management of the Scheme and PCS's Board looks after the finances and staff of the inspectorate. Mr. Pieter Laubscher was the first chairman of the National Seed Potato Committee and a levy on seed potatoes was based on the number of seed potato bags certified. PCS took over the management and administration of the seed grower meetings from PSA in 2006.

The **independence** of the ICCSP was questioned from time to time, due to the number of seed growers serving on the Council, even though it is not in the interest of the seed growers to relax the Scheme, as they are just as dependent on good quality plant material for sustainable and profitable farming as table growers. The criteria for councilors are continually questioned and reviewed. It was again asked in 2010 whether the seed traders and processors should also have membership, on which PSA was invited to nominate a processor to serve on the ICCSP. In 2011, the National Seed Potato Committee confirmed that it is not necessary to give processors membership, but a second table producer was appointed.

Over the years, PCS staff, seed potato growers and other role-players in the industry have played a leading role in further **developing the Scheme** and improving service delivery to the industry. In 1993, tubers with powdery scab from all regions were collected to determine the extent of the problem and in 1995 it was determined how to deal with Tomato Spotted Wilt Virus and Gold Cyst Nematode. It was also decided in 1995 that post-control virus and variety purity samples should be drawn separately. Due to the major financial implications when post-control results exceeded, it was decided in 1998 to apply the post-control virus per seed lot, instead of the entire block. The diffused light sprout technique for determination of variety purity was phased in over the next 2 to 3 years. DNA fingerprinting for the identification of varieties was also developed.

Tolerances for disease occurrence have been tightened over time, but where necessary, dispensations have also been granted to facilitate the management of certain diseases. One such example is the dispensation for the treatment of Silver Scurf / Black Dot. Dispensations give the seed potato growers and the authority the opportunity to gather information and data for possible changes to the Scheme. Any amendment to the Scheme must be scientifically founded and technically justifiable.

Voluntary downgrading of seed potatoes was for the first time requested in 1999. In 2008, the request was again rejected and finally granted in 2009 under a dispensation for one generation initially, on 1 July 2014 for more than one generation and on 25 March 2015 also in class. After the dispensation ended in June 2016, it was incorporated as a Scheme amendment.

In the case of **quarantine pests**, *ad hoc* committees were appointed for the management of these diseases. The most well-known committees were the Bacterial Wilt Committee and the *Ad hoc* Golden Cyst Nematode Committee. Since November 2014, these committees were combined in the Potato Quarantine Pest Committee, responsible for all quarantine pests infecting potatoes, as well as for making inputs regarding import requirements and emerging pests that may pose a threat to the South African potato industry, such as the tomato leaf miner, *Tuta absoluta*, and Zebra Chip.

Over the years, **measures** such as rotation periods, isolation distances and compulsory testing have been successful in reducing the number of Bacterial Wilt cases in SA in seed potato plantings from 35 in 1994, to none in 2016. This is certainly one of the biggest success stories of the Scheme. Since 1997, sites, where Biovar 3 of Bacterial Wilt is found, may no longer be used for seed potato production because of the long survival of the pest. At that stage, unregistered plantings could be made with registered plantings on the same unit. Since 1 July 1998, all plantings on the same production unit must be registered.

In 1998, the Agricultural Research Council (ARC) developed a **PCR method** for the testing of **bacterial wilt,** which was then made available as an additional test on a trial basis, which the growers could use voluntarily. The samples were processed at the Du Toit Groente laboratory, after which it was sent to ARC Infruitec for testing. False positives caused great damage and because of the unreliability of the test, it was terminated.

Although Bacterial Wilt is largely controlled and good testing methods exist, there was a major outbreak in table plantings in 2015 of which the origin could be traced to a source of certified seed potatoes. For the first time, the Department of Agriculture, Forestry and Fisheries (DAFF) issued orders and certified seed potatoes were destroyed. Bacterial Wilt is a devastating disease and everything must be done to combat the spread of this disease.

Virus management is complex and goes through cycles related to the climate, shift in varieties and the ratio between seed potato and commercial plantings in a region. When commercial plantings in a region exceeds seed potato plantings, the virus pressure increases to such an extent that seed production is only possible with the cooperation of all the producers in the region and applying extreme discipline. The occurrence of Potato Leaf Roll Virus (PLRV) decreased to such an extent that in November 2000 it was considered to treat PLRV the same as TSWV, which is only tested for, if observed. However, PLRV has increased again so that in November 2005, the cut-off value was tightened from 0.16 to 0.1. The prevalence of this virus has increased over the past decade, with 87% of disease-free samples in 2005, which has now decreased to 72% of samples with no PLRV infection.

In 2005, due to the tremendous **virus pressure** in the Sandveld, it was even decided that only plantings planted and killed-off between certain periods would be accepted for certification. In addition, the gene bank was audited to ensure that the virus did not originate from the gene bank. 10% of all Generation 0 seed potatoes were tested for all 7 viruses, and all imports from then on were tested with PCR for PVY and PLRV. The genebank and mini tuber results showed that the base of the seed potato industry is healthy. Now, all imported, and locally established material are tested for all 7 viruses, and PVY and PLRV are tested with PCR to ensure that our sources are disease-free.

The quantities of **uncertificated seed potatoes** planted, resulted in the review of the Scheme in 2010 considering provision for cheaper certified commercial seed potatoes. A task team came up with a proposal, but in 2012 it was decided that the proposed scheme is a change and not necessarily an improvement. The Scheme has passed the test of time and the *status quo* remained.

Potato Laboratory Services play an integral role in the certification of seed potatoes. We are privileged to have well-equipped laboratories with competent staff. Testing of samples from unregistered units or the testing of already certified material is constantly requested. The laboratories function under a very strict protocol and code of conduct that supports certified seed potatoes for the industry. Prior to the establishment of the Scheme, the Table System was developed for table potato producers who plan to do a single own multiplication of purchased certified seed potatoes thereby gaining access to the laboratories' expertise and tests. The table producer can use the Table System to help manage the virus situation in areas of high virus pressure, as only seed potatoes, of which the disease content is acceptable, will be planted.

Seed potatoes were originally sporadically **imported** from Scotland and the Netherlands, mainly to obtain better varieties. Due to the phyto-sanitary risk involved in the import of conventional seed potatoes, it was decided that after June 1997, imports of conventional seed potatoes are no longer allowed. Only *in vitro* plants and mini tubers, with zero tolerance for pests, can be imported. The importation of Technitubers® (G0 seed potatoes) caused great concern in 2005 as virus and *Pectobacterium* (Soft rot causing *Enterobacteriaceae* - SRE) were found in some consignments. To level the playing field for imported and locally produced mini tubers, all mini tubers infected with SRE's are destroyed instead of downgraded or allowed to be planted outside the Scheme. DAFF is currently busy with a Pest Risk Analysis as the import of conventional seed potatoes has been requested. The organized potato industry agreed that everything must be done to produce sufficient propagation material locally to meet this particular need and not to expose the potato industry to more risk.

Over the years, PCS inspected on average between 9 000 and 10 000 **hectares** of seed potato plantings and certified between 6 and 7 million 25 kg bags of seed potatoes. These seed potatoes are used to plant approximately 87% of the ±54,000 hectares of potatoes planted annually. Profitable commercial potato production is only possible when there is a continuous source of disease-free planting material. South Africa is in the privileged position that several severe pests does not occur here. *Phytophthora infestans* Mating Type A2, which is not in SA yet, was the cause of a tremendous late blight outbreak, leading to the famine in Ireland. Satisfying a short-term need might result in placing the entire potato industry at risk.

Looking forward, with the theme "Certify for the future!", the new era was entered with revisiting the structures in the seed potato industry, starting with governance aspects of the authority in terms of the South African Seed Potato Certification Scheme, the Independent Certification Council for Seed Potatoes (ICCSP). As a result, this impacted on the administration of the meetings, the regional delineation and the composition of the National Seed Potato Committee, which in turn will affect Potato Certification Service.

Besides the normal focus on ensuring good quality planting material, several workshops on the governance matters were held, followed by industry-wide consultation to ensure the best possible environment for good communication, allowing mandated requests and inputs resulting in of well-motivated submissions for objective consideration and approval if in national interest. The input from the regions, as well as the legal team's input regarding proposals for change were discussed at the meetings in June 2016 and was incorporated in the final proposal for adoption by the Seed Potato Growers' Forum.

It was clear that the ICCSP should be empowered (resourced) to execute its purported role to the benefit of the Potato Industry at large. The structures and flow of communication should promote both effectiveness (meet purpose) and efficiency (cost effective), as well as corporate accountability (credibility, integrity and risk management) with arm's length between structures, allowing for balanced and objective views resulting in scientifically sound and technically justified decisions resulting in credible outcomes. It was furthermore emphasized that mandated inputs from stakeholders through official structures will result in the buy-in from growers. The proposed structures should also address fiduciary responsibility and ensure financial transparency.

It has been a challenging year, given the revisiting of the industry structures amidst the normal day to day business. I am extremely grateful for the well-thought through proposals on the way forward. We have embarked on this journey like the Israelites of old with God leading the way. I am proud of the work done and look forward to seeing the benefits of the new structures.

I am immensely grateful to report that PCS ended the financial year (1 July 2016 to 30 June 2017) with a surplus of R2 133 886 after tax, instead of the budgeted surplus of R91 570. The budgeted hectares for the year were 9 309. In total, 10 586 hectares were registered, which was 1 277 more than expected, resulting in this surplus. Thank you to all staff who worked together to get all the work done. PCS is still a going concern and continually strives to deliver a professional and cost-effective service amidst fluctuating hectares.

Each committee member is thanked for valuable inputs assisting us in our endeavours. Without your insight and support we will not be able to do our work properly. To the respective chairmen, Mr. Gerhard Posthumus of the PCS Board of Directors, Mr. Llewellyn de Kock of the National Seed Potato Committee, and Dr. Dave Keetch and Adv. Les Kügel of the ICCSP, thank you for your competent guidance and commitment to the industry. A special thank you to our Executive Committee, Mr. Gerhard Posthumus and Vice-Chair, Mr. Jakkie Mellet, for sharing your knowledge and valuable inputs made in support of our staff.

Despite some regions suffering severe challenges, I wish all the seed potato growers of South Africa a good and productive year. You are again reminded to apply basic good seed production practices, namely: begin with planting the best possible seed source, protect it from infection, rogue from start to end, sort properly and pack the right quantities. You, as the seed potato grower, oversee your seed potato plantings and see the whole process from selecting your seed source to planting, managing, harvesting and presentation of your seed lot for certification. PCS verifies, inspects and certifies the seed potatoes based on findings at certain intervals during the whole process.

Let us work together to Certify for the Future!

Sanette Thiart
Managing Director

BUSINESS REPORT

Potato Certification Service (PCS) is a Non-Profit Company (NPC) without members, established in 1995, with the mandate to certify seed potatoes.

PCS's vision is to play a leadership role in the pursuit of a sustained supply of healthy planting material for the South African potato industry.

PCS's mission is to be an industry-related service, which supports the South African potato industry to perform optimally by ensuring the availability of high-quality planting material.

PCS strives towards excellence by living the following values:

- Client trust and satisfaction
- Effective utilisation of resources
- Equal opportunities
- Performance orientation

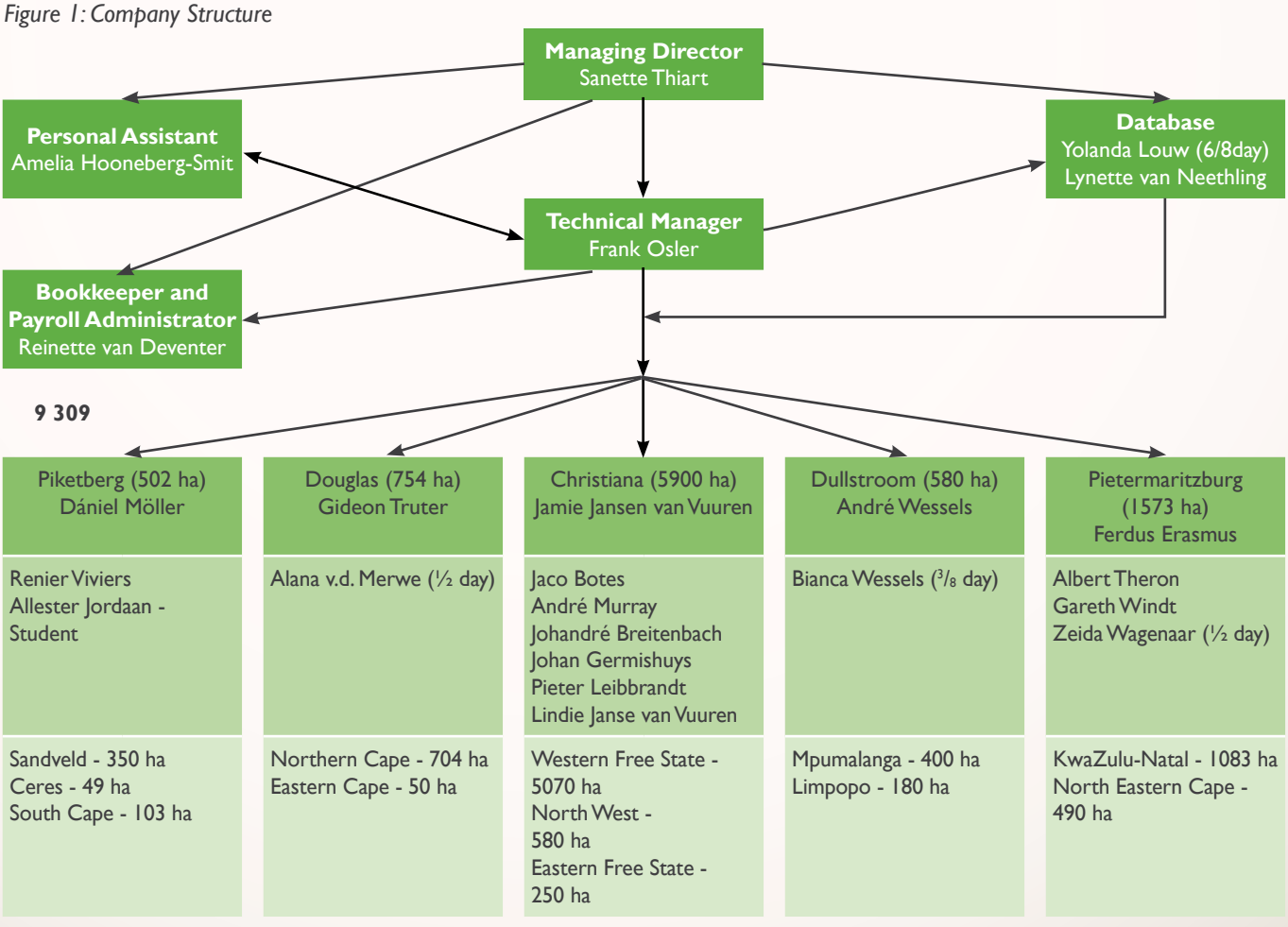
Potato Certification Service (NPC) is contracted as the service provider by the Independent Certification Council for Seed Potatoes (ICCSP), appointed as authority by the Minister of Agriculture, Forestry and Fisheries. PCS is audited by the Department of Agriculture, Forestry and Fisheries (DAFF), as PCS performs the functions and duties in terms of a statutory scheme. The South African Seed Potato Certification Scheme (Scheme) was promulgated in terms of the Plant Improvement Act, 1976 (Act No. 53 of 1976).

The purpose of certification is to certify seed potatoes of which the phyto-sanitary status in terms of diseases and pests falls within predetermined norms and that are true to type. To ensure the sustainability of potato production in South Africa, the Scheme is based on disease-free material as starting material.

Personnel

The company's Head Office is in Potato House in Persequor Technopark, Pretoria, with five regional offices located throughout the country, namely in Piketberg, Douglas, Christiana, Dullstroom and Pietermaritzburg. The regional offices and staff members are strategically placed to render the best possible service in the most affordable manner to growers. The structure of the company is reflected in Figure 1.

Figure 1: Company Structure



In the reporting period, the Technical Manager, Frank Osler, one certification official, Renier Viviers, an administrative assistant, Bianca Wessels, as well as the Data-Administrator, Yolanda Louw, have resigned. We wish them all the best with the changes in their careers. André Wessels has been promoted to Technical Manager, Albert Theron was promoted to Regional Manager: Mpumalanga, Limpopo and Gauteng with relocating the office to Middelburg. Marlé Theron was appointed as part-time administrative assistant to support Albert, with Sél-Mari van Oordt appointed as Data-Administrator. Johan Germishuys was transferred to Pietermaritzburg to fill the gap left by Albert's promotion. Leon Zietsman was appointed as trainee certification official in Christiana from 1 January 2017. Congratulations to everyone who were promoted and appointed. I trust that you will soon settle in and enjoy a fruitful career in certification.

Once again thank you to all the staff for your tireless assistance of our seed potato growers in producing good quality certified seed potatoes. I am extremely grateful for an exceptional team of committed people who work together to serve the industry.

COMMITTEES AND FORUMS

The committees and forums within the potato industry constitute organized platforms where most of communication with growers and other stakeholders in the industry take place. Aspects that need to be considered at the National Seed Potato Committee are tabled by the regional seed grower meetings. The various aspects are then debated and, if it is in the national interest, the committee refers recommendations and resolutions to the relevant bodies and committees involved in the seed potato industry.

Board of Directors

The management of the company is set out in the company's Memorandum of Incorporation and Board Charter. The Board Charter is evaluated and reviewed annually to ensure that PCS is managed in accordance with good corporate governance.

The Board of Directors had no resignations in the past year and comprised of nine non-executive directors with one executive director in the Managing Director position. Mr. Gerhard Posthumus was re-elected as Chairman of the Board, with Mr. Jakkie Mellet re-elected as Vice-Chairman. The Executive Committee consists of the Chairman, Vice-Chairman and Managing Director.

The directors comprise of the chairmen of the respective seed production regions, as reflected below.

Table 1: Board of Directors

Director	Position	Representative for:
Gerhard Posthumus	Chairman	Western Free State
Jakkie Mellet	Vice-Chairman	Mpumalanga, Limpopo and Gauteng
Frans Engelbrecht	Director	North West
Llewellyn de Kock	Director	Ceres
JJ van de Velde	Director	KwaZulu-Natal
Niekie Visser	Director	Sandveld
André Coetzee	Director	Northern Cape
Guybon Osler	Director	Eastern Free State
Garrick Christiane	Director	North Eastern Cape
Sanette Thiart	Managing Director	Potato Certification Service

The directors are thanked for their valuable contributions during the consultation process in coming up with a final proposal to the Seed Potato Growers' Forum. Thank you for availing your time and knowledge to the good of, not only the seed potato industry, but the entire potato industry. Whilst revisiting all the structures in the industry, it is envisaged that the Company's Board of Directors will consist of less directors, representative of all the seed growers.

Independent Certification Council for Seed Potatoes (ICCSP)

The Independent Certification Council for Seed Potatoes (ICCSP) is designated as the authority by the Minister of Agriculture, Forestry and Fisheries. The Council comprises of democratically elected seed potato growers, representative of the respective production areas; two table potato producers appointed by Potatoes South Africa

(PSA); a representative from the Agricultural Research Council (ARC); a representative of the Forum for Nucleus Material Producers (NUMPRO), a representative from Potato Laboratory Services (PLS) and the managing director of PCS. The Council has an independent chairman, appointed by the seed growers serving on the ICCSP. Three representatives of the Department of Agriculture, Forestry and Fisheries (DAFF) attend Council meetings but do not have voting rights. Table 2 below reflects the present composition of the ICCSP.

Table 2: Composition of the ICCSP

Council Member	Position	Representative for:
Dr. Dave Keetch	Chairman	Independent
Adv. Les Kügel	Co-Chair	Independent
Gerhard Posthumus	Vice-Chairman	Western Free State
JJ van de Velde	Member	KwaZulu-Natal
Jakkie Mellet	Member	Mpumalanga, Limpopo and Gauteng
Johan Greyling	Member	Western Free State
André Coetzee	Member	North- and Eastern Cape
Niekie Visser	Member	Sandveld
Llewellyn de Kock	Member	Ceres
Frans Engelbrecht	Member	North West
Guybon Osler	Member	Eastern Free State
Garrick Christiane	Member	North Eastern Cape
Sanette Thiart	Member	Potato Certification Service
Marieta Botha	Member	Potato Laboratory Services
Dr. Diedrich Visser	Member	Agricultural Research Council
Dawie Ras	Member	NUMPRO
Jan van Zyl	Member	Table potato producers
Rudi Heinlein*	Member	Table potato producers
Wouter van Amstel	Member	Table potato producers

*Resigned

The seed potato growers are organised in regional seed potato grower meetings, which in turn, have representation on both the ICCSP and the National Seed Potato Committee in terms of the number of hectares registered, the number of bags certified, as well as the number of seed growers per region. During the period under review, Mr. Rudi Heinlein resigned and Mr. Wouter van Amstel was nominated by PSA's National Council to represent the table potato growers.

Once the proposed structures have been approved by the Seed Potato Growers' Forum, it is envisaged that Advocate Les Kügel will take over the chairmanship as Independent Chairman.

The ICCSP is responsible for the formulation of policy guidelines in respect of the Scheme, as well as to ensure that the Scheme is run efficiently and sustainably in the interest of the potato industry as a whole. It is furthermore the ICCSP's duty to continually evaluate the Scheme and propose amendments where required. The evaluation of the Scheme in legal terms were finalised and is currently with DAFF for consideration and publication. The Protocol received considerable attention and is in the process of being finalized.

Regional Seed Grower Meetings

Regional seed grower meetings ensure communication from ground level upwards to the various organisations responsible for the different aspects that need to be addressed, as well as communication and feedback down to ground level. The Chairmen are elected by the growers in the region to serve as the mouthpiece of that specific region and currently still serve on the National Seed Potato Committee, the ICCSP, as well as the PCS Board of Directors.

National Seed Potato Committee

The National Seed Potato Committee is a committee of PSA and considers matters related to the seed potato

industry, the demand for seed potatoes and issues related to the trade in seed potatoes. The identification of research and marketing needs in respect of seed potato production is also the committee's responsibility. The committee furthermore makes recommendations to the ICCSP about national requirements in respect of the certification of seed potatoes and proposes amendments to the Scheme. It is envisaged that the composition of the National Seed Potato Committee will include members of all role players in the seed potato industry and that PSA will take back the administration of all seed potato grower meetings.

Table 3: National Seed Potato Committee

Committee Member	Position	Representative for:
Llewellyn de Kock	Chairman	Ceres
Gerhard Posthumus	Vice-Chairman	Western Free State
JJ van de Velde	Member	KwaZulu-Natal
André Coetzee	Member	North- and Eastern Cape
Johan Greyling	Member	Western Free State
Niekie Visser	Member	Sandveld
Jakkie Mellet	Member	Mpumalanga, Limpopo and Gauteng
Frans Engelbrecht	Member	North West
Guybon Osler	Member	Eastern Free State
Garrick Christiane	Member	North Eastern Cape
Jan van Zyl	Member	Table producer
Rudi Heinlein*	Member	Table producer
Wouter van Amstel	Member	Table producer
Johan Moolman	Observer	Seed Potato Traders' Forum

*Resigned

The Chairman of the Seed Potato Traders' Forum or delegated person attends the National Seed Potato Committee meetings as an observer, to address the interests of seed potato traders.

The Chairman of the Seed Potato Growers' Forum is also Chairman of the National Seed Potato Committee and represents the seed potato industry on the National Council and Board of Directors of PSA.

Mr. Llewellyn de Kock was elected as Chairman of the National Seed Potato Committee and the Seed Potato Growers' Forum. Mr. Gerhard Posthumus serves as Vice-Chairman. The two-year term expires at PSA's Congress and the Seed Potato Growers' Forum in September 2017.

Seed Potato Growers' Forum

The Seed Potato Growers' Forum (Forum) serves as a discussion forum in respect of resolutions related to the seed potato industry. The Forum is responsible for the:

- determination of needs within the seed potato industry;
- identification of research needs;
- identification of needs in respect of the certification of seed potatoes;
- identification of needs in respect of the selling of seed potatoes;
- making recommendations to the National Seed Potato Committee and the ICCSP regarding amendments to the Scheme;
- referral of resolutions to the respective committees;
- for the dissemination of information.

The eighteenth annual Seed Potato Growers' Forum was held at the Gateway Hotel in Umhlanga Ridge, KwaZulu-Natal, on 6 September 2016. The respective chairpersons of the National Seed Potato Committee, Potato Laboratory Services and the PCS Board of Directors provided feedback on the activities of the past year. At the Forum, PCS celebrated 21 years of service delivery to the potato industry.

Mr. JP van den Berg (L 017) was awarded the Bayer Seed Potato Grower of the Year Trophy, with Mr. Frans Engelbrecht from Firna Boerdery (L 002) and Messrs. Kiewiet Möll and Willie Goosen from W&K Boerdery (W 025) as finalists.

Seed Potato Certification

During the period under review, 10 297 hectares were registered (planting date) by 117 seed potato growers, which included 79 hectares registered for mini tuber production. Currently there are 158 active seed growers. The active seed growers are all the growers who have, for the past 4 years, registered plantings for certification of seed potatoes under the Scheme.

Table 4 indicates the hectares registered per production region for the planting dates, 1 July until 30 June each year, as well as number of 25 kg bags certified on those plantings.

Table 4: Registered hectares and certified yield

Region	2013/2014		2014/2015		2015/2016		2016/2017*	
	Planting (Hectares)	Yield (25 kg bags)	Planting (Hectares)	Yield (25 kg bags)	Planting (Hectares)	Yield (25 kg bags)	Planting (Hectares)	Yield (25 kg bags)
Sandveld	487	330 734	644	297 850	339	175 344	204	13 860
Ceres	160	104 826	126	37 036	37	35 690	65	33 438
Northern Cape	581	385 875	674	491 597	849	462 953	1 163	525 841
Eastern Cape	54	20 887	51	29 538	95	68 591	132	20 3002
Western Freestate	4608	2 963 864	4 961	2 923 555	4 996	3 189 880	5 195	959 788
Eastern Freestate	160	119 294	296	235 853	273	73 203	366	256 684
KwaZulu-Natal	1401	1 029 918	1 432	1 081 961	1 417	733 028	1 211	968 625
Mpumalanga	464	362 545	468	389 632	365	211 051	330	292 723
Limpopo	90	76 108	207	171 558	126	99 272	217	105 119
North West	424	887 115	509	973 588	597	1 083 705	717	1 171 559
N Eastern Cape	260	182 805	336	336 952	541	162 695	630	246 977
Southern Cape	89	47 908	76	65 439	149	66 972	66	45 563
RSA	**8773**	**6 511 879**	**9 780**	**7 034 559**	**9 784**	**6 362 406**	**10 297**	**6 640 493**

*Not complete

The Western Free State region currently produces 50.1% of the seed potatoes certified in South Africa. Not all the seed potatoes from the hectares registered in the period under review have been certified.

The **certified yield** per annum varies between 6 and 7 million bags. The number of mini tubers certified annually is more than 11 million, with 11.6 million last year. At present, there are seven mini tuber production facilities that are approved by the ICCSP. They are Rascal Seed Research Laboratories, Potato Seed Production, Advanced Potato Propagation, Ceres Aartappels, Super Spud Seed Potatoes, Maluti Mini Tubers and Griekwaland-Wes Bpk.

The **generation distribution** indicates that Generation 1 to Generation 4 seed potatoes form the biggest portion of certified seed potatoes (89%), with the G6, G7, G8 and Standard Grade certified at 11%. These figures might change slightly as the final number of bags of seed potatoes certified on the plantings registered late in the reporting period is not yet available.

Table 5: Generation distribution

Generation	2006/2007	2016/2017*
Distribution	25 kg Bags	25 kg Bags
G1	205 461	174 813
G2	555 017	1 023 925
G3	1 536 474	1 685 217
G4	1 792 852	2 447 870
G5	1 144 562	643 577
G6	326 842	408 159

Generation	2006/2007	2016/2017*
G7	97 687	100 573
G8	139 655	131 444
Standard Grade	17 657	24 915
Total	5 816 207	6 640 493

*Not complete

If one looks at the **variety distribution** of the top ten varieties that were certified during the past ten years, as reflected in Figures 2 and 3 below, tremendous changes took place. Where BP1 was the second largest planted variety ten years ago, it is replaced by Sifra. The top ten varieties consist of varieties with Plant Breeders' Rights, except for Up-to-Date, which is an open commercial variety.

Figure 2: Variety distribution as in 2006/2007

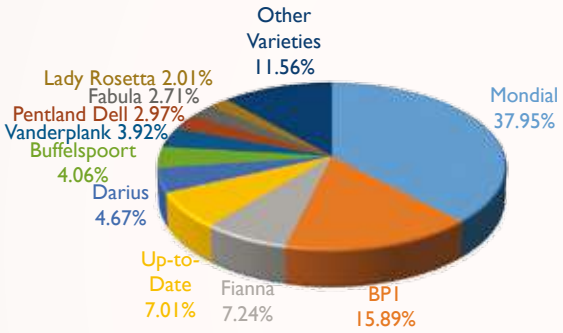
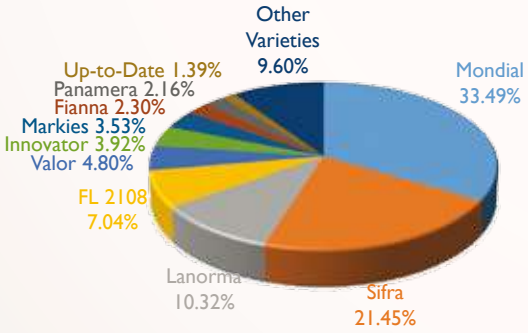


*Figure 3: Variety distribution as in 2016/2017**



The other **smaller varieties** planted are indicated in Figure 4 (2006/2007) and Figure 5 (2016/2017*). Ten years ago, there were still two ARC bred varieties, namely Caren and Mnandi, but during the period under review there is none.

Figure 4: Composition of other smaller varieties in 2006/2007

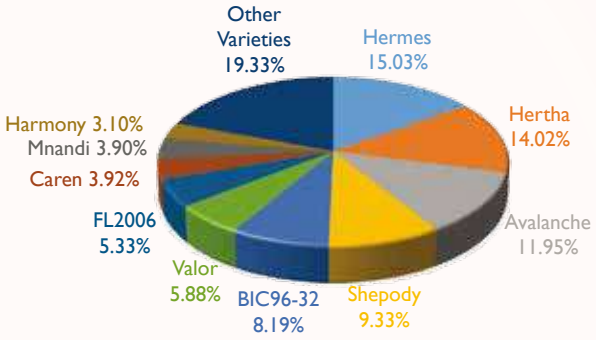
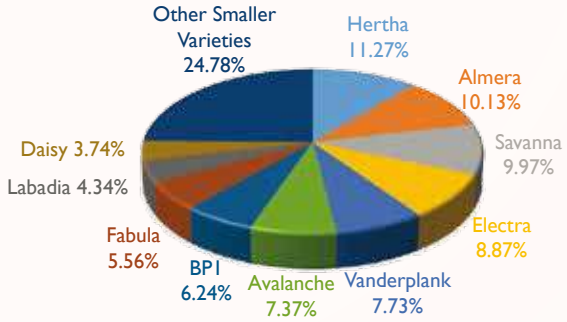


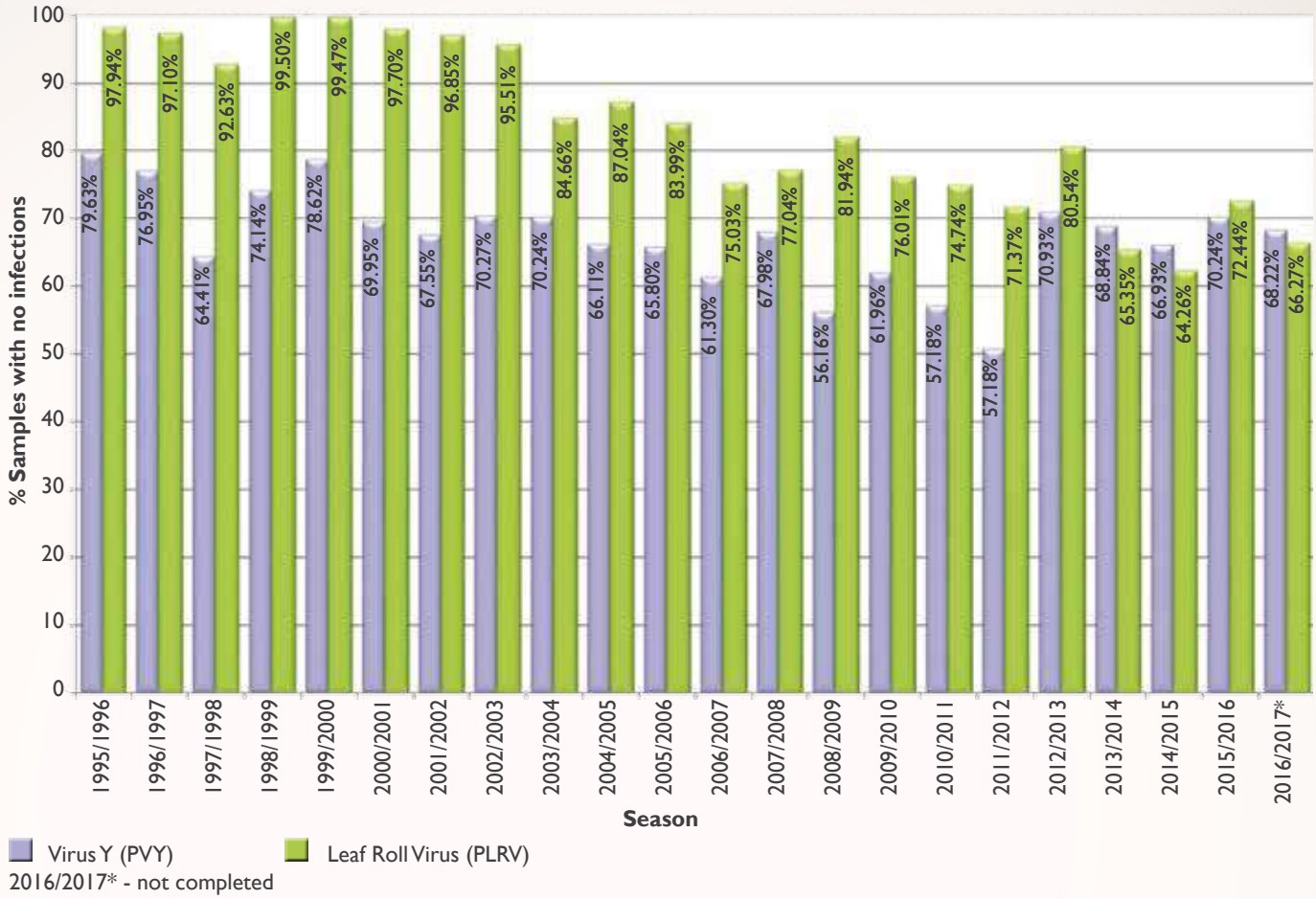
*Figure 5: Composition of other smaller varieties in 2016/2017**



*Not complete

Regarding **diseases,** Figure 6 shows the percentage of virus free samples nationally. There was a decline, but it seems to be stabilising.

Figure 6: RSA:VIRUS OCCURRENCE (Field samples: G0 – G7 planted)



For the past 4 years, no seed potatoes with Potato Tuber Necrotic Ringspot Disease (PTNRD) were found.

As part of the dispensation for the treatment of seed potatoes for Silver Scurf / Black Dot, record is kept in respect of all certified seed potatoes treated to use this data for motivation when the dispensation expires in November 2017. During 2015/2016 (complete year) 240 172 x 25 kg bags of certified seed potatoes were treated. Most regions treated seed potatoes, except the Northern Cape, North West and Eastern Cape. No complaints were received with regards to treated seed potatoes.

In the reporting year, no *Ralstonia solanacearum*, the bacterial wilt-causing organism, was found in seed potato plantings.

The Potato Quarantine Pest Committee, under the chairmanship of the Directorate Inspection Services, DAFF, is the watchdog of the potato industry for quarantine pests. Bacterial wilt, caused by *Ralstonia solanacearum,* Potato Cyst Nematode (PCN - *Globodera rostochiensis)* and wart disease, caused by *Synchytrium endobioticum,* are officially controlled in terms of the Scheme. Import regulations and biosecurity also falls under the jurisdiction of this committee.

The Scheme is based on phyto-sanitary status, as well as variety purity. Mixing of varieties was only found in 0.14% of all seed certified. Where mixing took place, the growers were notified in writing and the necessary corrective action was instituted. Out of the 7 million bags certified, mixing detected affected only 9 001 bags.

Owners and agents of varieties, were made aware of the labelling required for unlisted varieties and that the labelling must indicate that such material is for evaluation purposes only.

The South African Seed Potato Certification Scheme is scientifically proven, technically justified and provides the reassurance that seed potatoes were certified by qualified personnel, backed by laboratory results. Sustainable potato production starts with planting of certified seed potatoes.

Please visit us at www.potatocertification.co.za.

Plantovita

PLANTOVITA

CONTENT

VISION AND MISSION

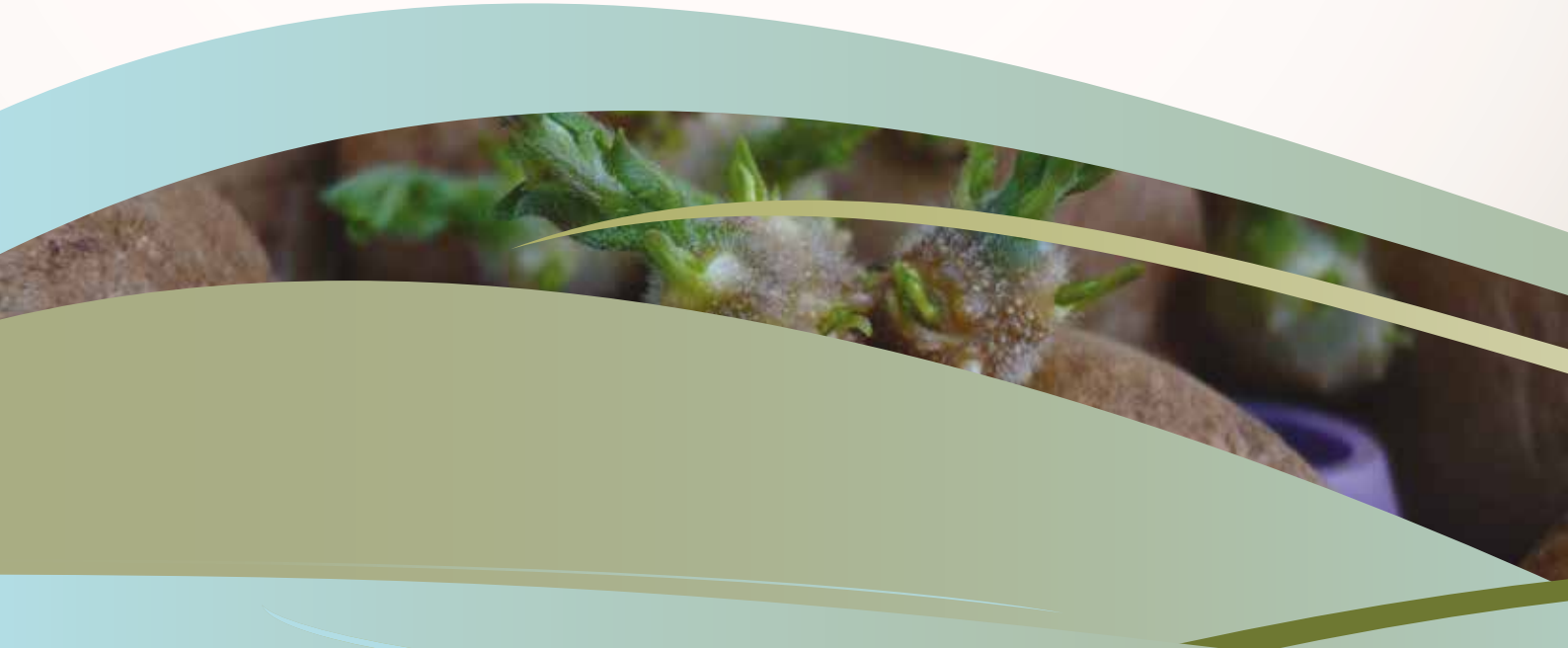
VISION

To render laboratory services to the seed potato industry in respect of tracing specific pathogens and to comply with all relevant requirements in order to determine whether seed lots comply with the certification standards as prescribed by the South African Seed Potato Certification Scheme.

MISSION

Potato Laboratory Services strives to render optimal services to the South African potato industry which:

- Are based on scientific principles.
- Can be executed by qualified and competent technologists.
- Is managed on sound economic principles.
- Take into account the trust and needs of the clients of the company.



CHAIRPERSON'S REPORT

JOHAN VAN DEN HEEVER

Since this is my last report as Chairperson of Plantovita/PLS, I would like to start by acknowledging those directors and personnel members who have been on the Plantovita/PLS journey with me since 2011.

Decision making in Plantovita seldom takes place without intense debate and discussion. Members of the Board of Directors take their role as company owners seriously. As a result, our control laboratory is standing strong and independent. Not only is there growth in terms of expertise, optimal service delivery and turnover, but the facility has been physically extended to control risks and improve service delivery.

To the directors of Plantovita: Thank you for your excellent co-operation. For your loyalty and for realising that we need this entity in PLS and for supporting and promoting it as such.

Of course there are those people who must execute the instructions and decisions of the directors. Marieta and Anel, who had to take the reins as Chief Executive Officer and Technical Manager respectively and who are responsible for the stability, standardisation and quality of service delivery at Plantovita and PLS.

I could always rest assured the work is being done. The tasks you are given are not always easy, and the type of instructions you are given can sometimes cause ructions. Yet you forge ahead and, in your own unique way have only ever delivered excellent work. Thank you for that.

Gavin Hill has been elected as the new chairperson of Plantovita/PLS. Gavin is no stranger to the management and understanding of a laboratory company. Congratulations to Gavin on this appointment and good luck with any possible challenges ahead.

Support your local laboratory and its personnel. These are the people who get little recognition for the long hours, organisation, management, accuracy and concentration when deadly routine work expects this of them. These are also the people who get the most criticism when test results fail to meet expectations. They remain the company's greatest assets. Appreciate them. Support them.

It was a privilege to take the journey with PLS/Plantovita. I experienced all the highlights with you, and I can't even think of any negatives. Good luck and best wishes to the growers, the directors of PLS companies and the laboratory personnel for many more years of healthy seed potatoes and test results.

Johan van den Heever.

CHIEF EXECUTIVE OFFICER

MARIETA BOTHA

As in the case of any business tasked with carrying out tests, the results of which carry weight in rand and cents and which are not always what the client expects, PLS must at times stand up and take action when it comes to the reliability of the ELISA test. For this reason, this report focuses on the work done to investigate issues within the industry.

Questions and doubts about the ELISA test are not new. After all, we work in an environment that cannot always be controlled 100% by the grower. We work with pathogens that are not always visible with the naked eye. And we work with a method which, just like any other test, has certain limitations.

Since 1984, ELISA (serological test) has been used locally for the detection of viruses in Potato Laboratory Services (PLS). Globally, ELISA is still the preferred method in other seed certification schemes, for the following reasons:

- It is a robust test
- The test is reliable
- Economically speaking, it is cheaper in terms of rand and cents than any other method
- For high turnover on a commercial scale, it is the ideal method.

Questions being asked today about the reliability of the ELISA test are exactly the same questions that were being asked in 2003, 2004. The difference is that the emphasis has shifted from concern about an increase in virus Y (PVY) to concern about an increase in leafroll (PLRV).
The irony is that PLRV no longer even exists for the seed grower in Europe, since it has effectively been managed out of the seed propagation system.

Concerns about the reliability of the ELISA test, previously and currently, can be expressed as follows:

- Differences between field inspection observations and expected ELIA test results
- Variation between field sample and post-control virus results
- Is the test package used in PLS sensitive enough? Is it specific and does it detect all the viruses that occur locally?
- How does the Bioreba test package compare to other test packages available internationally?
- Does PVY ntn occur locally and does the Bioreba test package recognise this PVY strain?
- Are the OD values (optimal density values of colouration on the plates, read with a spectrophotometer) used in PLS for PVY and PLRV optimal? Are they not too high, leading us to report false negatives? Should it be the same for PVY and PLRV?

These questions were noted and in order to address them, during the period 2004 to 2007, 13 projects were officially submitted to the National Research Committee of Potatoes South Africa (PSA). Approved projects were officially registered and funded by PSA. The progress and results of these projects were presented annually to the National Research Committee.

Below is a list of the foremost projects and a summative description of the purpose of each:

- **Quality control:** To confirm the presence or absence of a virus in a sample (tested with ELISA) by retesting the same sample with ELISA.

- **The 28-days rule:** To investigate the effect of the passage of time on the detectability of a virus in a tuber using ELISA following the chemical suspension of dormancy.
- **Cut-off value:** To determine the optimal cut-off value for PVY and PLRV to limit the risk of false negative ELISA test results.
- **Optimisation of the test procedure:** Practical evaluation and comparison of internationally available ELISA test packages as far as sensitivity, specificity, practical use and economy are concerned.
- The provision of positive material, as obtained with the ELISA test, to Stellenbosch University to be part of an **international PVY strain collection.** The broader purpose was also to determine whether PVY strains were being detected with the Bioreba ELISA test package.

Hence an extensive and intensive investigation into the ELISA test and the use thereof in the local Seed Potato Certification Scheme.

The execution and outcome of this project can be briefly descried as follows:

Quality control

Samples retested with the ELISA were selected from the following categories:

- Field and post-control samples of which the original ELISA results > 5% virus, generations 1 to 3
- Field and post-control samples of which the original ELISA results >15% virus, generations 4 to 8
- Field samples on which a dispute was declared
- Field and post-control samples with low or no virus in the original test to determine whether the results were false negative

Selected samples were, after the original ELISA, returned to the hothouse (in the case of PVY) or planted out in a greenhouse (in the case of PLRV). All sprouts that developed on the PVY tubers and all haulms that developed in the case of the PLRV tubers were harvested and the ELISA test was repeated. This project lasted for four years.

The following table illustrates the results of the 309 samples that were successfully tested:

Sample	Number tested	+OT = +KT	-OT = -KT	+OT= -KT	-OT = +KT
PVY 200	186	125	42	7	12
PVY 400	68	43	17	4	4
PLRV 200	43	26	16	1	0
PLRV400	12	3	5	1	3
Sample	Number tested	+OT = +KT	-OT = -KT	+OT= -KT	-OT = +KT
Total	309	197	80	13	19
% Difference				4%	6%
		90% OT = KT		10% OT ≠ KT	

OT = Original test, QCT = Quality control test

After four years of feedback, the Research Committee was satisfied with the number of samples tested and the results achieved. The satisfaction was expressed that these results showed that the ELISA test delivers reliable results, taking into account its limitations, and that it is a suitable method for use in the Scheme.

The results were presented to the PLS Advisory Committee, the National Seed Potato Committee and ICCSP. In all cases the ELISA was approved as a suitable method for use in the Scheme

The 28-days rule had the broad purpose of determining at which point in time, following the chemical suspension of dormancy, the virus is at such a level in the tuber that it can be optimally detected by the ELISA.

From each of the five (5) production regions, a field with PVY and PLRV was identified. From each of these 5 fields, 3 750 tubers were drawn. The 3 750 tubers from fields 1 to 5 were divided into 16 x 200 subsamples marked A1 to A4, B1 to B4, C1 to C4 and D1 to D4.

The samples were treated with Progip and left in the hothouse at 27°C and 70% RH and tested as follows:

Subsamples:	Test on:
A1, B1, C1, D1	21 days
A2, B2, C2, D2	28 days
A3, B3, C3, D3	35 days
A4, B4, C4, D4	42 days

The comparison of the test results indicated that 28 days is the optimal time to detect with the ELISA any virus in tubers where the dormancy has been chemically suspended. Similar work in Switzerland confirmed these results.

After reporting back to the PLS Advisory Committee, the National Seed Potato Committee and the Independent Certification Council for Seed Potatoes (ICCSP), the PLS test protocol was adjusted and samples may not be tested within 28 days after chemical treatment, on condition that all the tubers in the sample must be sufficiently sprouted.

In a national survey involving 1 747 samples, the following was found:

- Cultivar plays a major role in how early tubers develop sprouts and are thus ready to be tested.
- On average, it takes samples 43 days to sprout after the chemical suspension of dormancy.
- On average, only 10% of all samples are ready to be tested at 28 days, and only 8% before 28 days.

The cut-off value investigation indicates the determination of the ideal OD value of an ELISA reading to determine if a tuber tested positive or negative.

This project consisted of three parts:

Firstly: In 2004/2005, the cut-off value for PLRV was lowered from 0.160 to 0.100 based on the results of preliminary tests, which indicated that false PLRV negatives can slip through between 0.100 and the original 0.160.

The second leg of the project aimed to determine the ideal cut-off value for PLRV. *Should it be stricter and even lower than 0.100?*

The project was managed as follows:

- Selected samples were planted out in the greenhouse.
- The emerging haulms were harvested and tested for virus with the ELISA.
- The virus status was confirmed based on the valid cut-off value, i.e. 0.100 for PLRV and 0.160 for PVY.

This table summarises the results:

Results			
PLRV		PVY	
OD values selected	+ELISA on 0.100	OD values selected	+ ELISA on 0.160
0.05 – 0.08	69%	0.10 – 0.16	*100%

Results			
PLRV		PVY	
OD values selected	+ELISA on 0.100	OD values selected	+ ELISA on 0.160
0.08 – 0.10	68%	0.16 – 0.25	89%
0.10 – 0.16	81%	0.25	97%

*Only 12 samples were tested

The final aim was to determine, by means of the studying of laboratory data, how the Scheme would be affected should the PLRV cut-off value be lowered further. In total, the data from 4 626 samples was examined. The finding was that should the PLRV cut-off value be lowered from 0.100 to 0.08, 4% of the samples submitted would test out of tolerance.

After the results had been submitted to the Research Committee, it was decided that sufficient attention had been given to this matter. After a discussion among the PLS Advisory Committee, the National Seed Potato Committee and ICCSP, a decision was made to uphold the cut-off value of 0.100 for PLRV and 0.160 for PVY.

With regard to the optimisation of the test it is important to know that this was not just a once-off project, but that the evaluation and comparison of internationally available test packages is an ongoing task of the control laboratory, Plantovita.

The following table illustrates the history of test package evaluation for the detection of virus with ELISA in PLS

Note that Bioreba has been delivering one of the best ELISA test packages since 2004. This is a company that has sales in 70 other countries. The competition among international manufacturers is so great and the successes such a matter of pride and honour that very few test packages don't perform well in evaluations.

Period	Test package in use	Evaluation and comparison	Test packages decided on
1997/1998	Boehringer & Mannheim (B & M)	Bioreba, Sanofi, Agdia, B & M	Bioreba
2004/2005 (Official project)	Bioreba	Bioreba, Agdia, LNR, Sanofi, SASA, Schill Diagnostic	Bioreba
2007/2008 (Quality control)	Bioreba	Bioreba, Prime Diagnostics	Bioreba
2012/2013 (Quality control)	Bioreba	Bioreba, Prime Diagnostics, Agdia, AC Diagnostics	Bioreba
2016/2017 (Quality control)	Bioreba	Bioreba, Prime Diagnostics, Agdia, AC Diagnostics	In progress

Due to the outcome of the evaluation, it had not been necessary as yet to change to a different test package. There are ring tests among the laboratories to compare results. Plantovita is also involved in ring tests required by Bioreba with consumers of their products. There is quality control at national and international level.

Participation in international PVY strain collection

This initiative arises from Plantovita's involvement in the PVY working groups of the European Association for Potato Research (EAPR) of which we have been members since 2006. The purpose was/is to implement a so-called "international library" of all PVY strains that occur on potatoes worldwide. The scientists involved constantly monitor molecular changes in virus strains and, should there be any new combination, we would certainly be aware thereof.

The question constantly being asked is whether the Bioreba test package used in PLS does indeed recognise all PVY and PLRV strains occurring in South Africa. There is some speculation about so-called *super virus strains* here at the southern tip of Africa which are apparently unique in the world.

The material used in this project was collected from routine samples that tested positive from day to day in the laboratory. At that stage, the seed testing centre did not yet possess molecular technology, and the strain analysis was done by Prof. Dirk Belsted of Stellenbosch University.

No PVY strains unique to South Africa could be identified in this survey. It was also found that the Bioreba test package recognises PVY ntn and that it can thus deliver positive ELISA results. The presence of PVY ntn in SA was thus confirmed with this survey

In 2016, Prof. Belsted took a collection of PLRV strains to Switzerland for analysis by Bioreba. In the following e-mail correspondence, Dr Denise Altenbach of Bioreba confirms the results of the analysis:

We finished testing the PLRV samples from South Africa.

In a first test series, we tested sprouted tuber samples in parallel by ELISA, qPCR (TaqMan) and PCR macroarray. We had 100% overlap with the three methods.

The detection limits of Australian / Peruvian / European and Swiss variant groups do not differ. The detection limits are very similar in the comparison between ELISA and qPCR. Our experiments show that the ELISA test and the qPCR equally well recognize the ZA PLRVs and the European PLRVs.

The investigation thus confirms that there are currently no so-called unique strains of PVY or PLRV in South Africa that are not being detected with the ELISA.

Here is a summary of the other projects also carried out during this period:

Project name	Purpose	Investigation	Conclusion
Investigation into the influence of apical dominance	To determine whether the apical eye is the correct location for the sampling of PVY	2 626 samples were examined to confirm the presence of PVY in the apical sprout	In 98% of the tests, PVY was successfully detected in the apical sprout with ELISA
The influence of the chemical suspension of dormancy on the detection of PVY in the apical eye	To address the allegation that the sprout grows out under the virus during chemical stimulation	2 626 samples were examined. Two different treatments were applied. As control, no treatment was also included.	Chemical suspension of dormancy had no influence on the detection of PVY in the apical eye
Variation in virus results between samples of the same unit (A, B, C, etc.)	To determine the influence of sampling error and optimal sample size for better prediction of the virus infection of a field	36 samples from 12 units were examined	80 tubers can reasonably predict whether or not the virus is present BUT are not sufficient to predict the percentage virus in a field. There could even be differences in PVY results among tubers of the same plant.
Survey of PVY ntn	To determine whether this PVY strain occurs in South Africa	CBS/Plantovita provided the material from samples where tubers had tested positive for PVY	Molecular analysis by US confirmed that PVY ntn does occur in tubers locally
Database for plant aphid monitoring	To involve all regions in plant aphid monitoring and to establish the relevant database at CBS/Plantovita	Training in the identification of aphid by PLS personnel and the establishment of a database	Due to the extent and value of the project and the science behind it, the project was handed over to the UP and Dr Kobus Laubscher

Project name	Purpose	Investigation	Conclusion
Optimal chemical treatment of cut tubers planted in greenhouse	To prevent tubers from rotting when being planted out	14 treatment were examined, including 3 variations of non-chemical treatment	3 of the tested methods performed above average

The above results were reported to the National Research Committee of PSA, the PLS Advisory Committee, the National Seed Potato Growers' Committee, and to ICCSP where necessary.

With regard to the validity of the ELISA test, the following questions from the industry were addressed by PLS through the execution of these projects:

Issue	Industry question	Outcome
Field sampling	Can the method of field sampling contribute to the differences in virus results of subsamples from a single field?	Yes, due to the distribution of virus in the field and even in the plant
Sample size	Is the sample size sufficient for virus tests?	80 tubers are only sufficient for a virus percentage prediction. Sample sizes were adjusted to a minimum of 200 tubers for field and post-control samples
Influence of chemical suspension of dormancy	Does forced suspension of dormancy mean that the tuber grows out under the virus?	Chemical treatment has no negative effect if there is virus in the tuber
Optimal time of testing for the detection of virus with ELISA	That period after chemical treatment when the virus levels are optimal for the detection thereof with ELISA	The 28-days rule was instituted
Sampling of the apical eye for PVY detection	Is this the correct location to sample tubers for PVY?	Yes
Reliability of the test: Quality control	Is the ELISA test reliable?	Yes
Evaluation of internally available test packages: Quality control	Does PLS use one of the best internationally available test packages?	Yes
Optimal OD cut-off value for PVY and PLRV	Should the OD cut-off value for both viruses be the same and what should it be?	Data shows that for PVY and PLRV, 0.160 and 0.100 respectively are optimal
Collection of PVY strains and the local occurrence of PVY ntn	Are there combinations or mutations of strains in South Africa that are different to the rest of the world?	No

Where deemed necessary changes were made to the PLS test protocols and the Scheme. It is important to understand that PLS, from the ranks of the control laboratory, only makes recommendations to the various committees and ICCSP once proper investigations have been done. Recommendations for adjustments must be supported by sufficient data and satisfactory results.

PLS has come a long way since the establishment of the satellite laboratories in 1983/1984. Today we can confidently say:

- PLS is in touch with developments in respect of methods and pathogens at international level.
- PLS enjoys excellent communication and relations with suppliers of test packages, as well as experts in relevant situations overseas.
- As far as the commercial testing of seed potatoes with ELISA is concerned, the technology in PLS is the experts. This is what these people concern themselves with daily and there are no other local laboratories testing seed potatoes on this scale.
- Ongoing quality control and training of PLS personnel is our business.
- Today, PLS boasts a molecular laboratory at Plantovita. We can therefore keep up with any other country where PCR is used for the testing of seed potatoes for certification.

The laboratories in PLS

In the South African potato industry there are five laboratory companies that perform tests to determine the disease status of seed potatoes presented for certification. The tests are a requirement of the South African Seed Potato Certification Scheme to determine whether the seed potatoes produced by registered growers comply with certain disease tolerances.

The laboratory companies each function as a private entity and are strategically located in order to serve a specific production region. All five companies must, in accordance with the Plant Improvement Act, be registered with the Department of Agriculture, Forestry and Fisheries as a facility for disease testing.

The term Potato Laboratory Services refers to these potato laboratories as a group and does not affect individual ownership. Plantovita fulfils the role of controlling laboratory in this group of companies and must see to it that standards, as endorsed in the official PLS test protocol, must be continually maintained by all the laboratories.

The laboratories are audited by Plantovita annually in the testing season. Taking into account the recommendation of Plantovita and the audit reports submitted to the Technical Committee, a laboratory is given authorisation from year to year by the Independent Certification Council for Seed Potatoes (ICCSP) to carry out tests as required by the Scheme. The standard for audit reports is determined by the official test protocol of PLS. The protocol has been compiled on the basis of international standards (ISO) and good laboratory practices.

There is a sixth laboratory company, Messrs Solani Labs. Solani Labs is not an operational laboratory, but an administrative company where shareholders Mpumalanga, Limpopo, Gauteng and the Eastern Free State register in respect of hectares of production and from where the participants are invoiced for laboratory tests.

Each of these laboratory companies is managed by a group of directors elected by the owners of the company. Plantovita, as the controlling laboratory of PLS, belongs to the seed potato owners by way of shares, as follows:

Director	Representing the following shareholder
Mr Johan van den Heever	Chairperson (Unattached)
Mr Gerhard Posthumus	Wesgrow
Mr Jakkie Mellet	Solani labs
Mr JJ van de Velde	KwaZulu Natal Laboratory Services
Mr Tiekie de Kok	Sandveld Laboratory Services
Mr Andre Coetzee	Northern Cape Laboratory Services
Mr Chris Kleingeld	Dry Bean Producers' Organisation
Dr Fienie Niederwieser	PSA Research Manager (co-opted)*
Mr Gary Vorster	PSA (Representing Table Producers)*

*PSA does not own shares in the company

The Plantovita Board of Directors is responsible for the financial and administrative decision making in the company. Although shareholding differs among the regions, the directors have equal voting rights. Ms Marieta Botha is the Chief Executive Officer of the company and must ensure that the Board of Directors' decisions and instructions are executed. The responsibility for the technical wellbeing of PLS lies with the Technical Manager of Plantovita / PLS, Ms Anel Espach.

The role of Plantovita as control laboratory of PLS

The regions, by way of an agreement, pay a technical management fee to Plantovita. This tariff is presented annually to the Board of Directors for approval. This indispensable service by Plantovita to the region involves, but is not limited to, the following:

- Plantovita Management represents the laboratories at the highest level of the industry.
- Plantovita must ensure that the standards as determined in the various test protocols are applied and maintained in the respective laboratories and is thus responsible for the annual audits.
- Ring tests to measure standardisation among the laboratories are developed and evaluated at Plantovita.
- Plantovita participates in international circle tests of the manufacturer of the virus test package used in PLS.
- Plantovita is responsible for the training of all newly appointed laboratory technicians in any of the existing laboratories.
- Ongoing training of existing laboratory technicians is the responsibility of the control laboratory.
- Plantovita must technically support participating laboratories in the event of test problems, find solutions and make recommendations until the problem is resolved.

- Plantovita makes recommendations to the industry in terms of specific disease investigations and matters of the scheme.
- Plantovita management serves on the European Virus Working Group of the EAPR and represents PLS in this respect at international level.
- If it becomes necessary to change existing protocols, Plantovita does the investigation and makes the necessary improvements to optimise the test processes.
- The Technical Manager of the controlling laboratory stays abreast of disease and test developments nationally and internationally and must also, where necessary, make recommendations, identify and compile projects, and present them to the National Research Committee.
- The control laboratory evaluates all ELISA results in respect of bacterial wilt tests before they may be made available to the regions.
- When tests in any region come under suspicion, the controlling laboratory becomes the consultant for investigations and reporting insofar as the tests relevant to the specific situation are concerned.

Service delivery in PLS

In the PLS test protocol, there is a strict code of conduct prescribing that the participating laboratories may only test seed potato material originating from registered units for specific viral and bacterial pathogens. Specific viruses refer to PVY, PLRV, PVA, PVM, PVS, PVX and, if requested, through Certification Services TSWV. Bacterial wilt disease enjoys quarantine status in the SA seed potato industry. All registered units are therefore sampled for this pathogen, with the samples being sent to the regional laboratory for disease investigation. All these tests are based on serological methods, i.e. the ELISA test (described in detail in the management report).

Since 2015, molecular testing (PCR) has been available to any seed potato grower wanting to make use thereof. The technology is currently only available at Plantovita. PCR tests are limited to virus examination of seed potatoes and the confirmation of all positive bacterial wilt ELISA results.

Plantovita has the necessary expertise and facilities to offer extensive diagnostic tests to the grower or any participant in potato production. The experience is that the diagnostic centre of the company is enjoying increasing respect, evident in the increase in the number of samples submitted, as well as a growing client base.

The Technical Committee

The Technical Committee is a committee of Plantovita, representative of Plantovita, the Potato Certification Service and Potatoes South Africa. Its function is, amongst other things, to discuss technical matters that promote good co-operation and relations amongst Plantovita, the Potato Certification Service and Potatoes South Africa.

What is the purpose of the Technical Committee?

- To find mutual and workable solutions to any shortcomings that could hamper the effective operation of the certification process;
- To identify needs within the testing and certification process, and to propose guidelines to guarantee the credibility of the system;
- To identify pests and diseases, as well as trends, and to institute preventative measures and make recommendations;

- To identify potential research projects in support of the South African potato industry;
- To advise ICCSP by establishing approval requirements for potato laboratories;
- To evaluate technical issues on a continuous basis to ensure that quality and standards are maintained;
- To take any issues or decisions arising from the above points that can affect the Scheme, as well as the testing or certification procedures, or which can require changes thereto, to the respective committees and the Authority for attention as needed.

The Committee is entitled to co-opt any other expert, should a specific problem require specialised attention.

The Technical Committee consists of the following members:

Institution	Committee member
Independent Certification Council / Chairperson	Dr Dave Keetch
Potatoes South Africa	Dr Fienie Niederwieser
Potato Certification Service	Mrs Sanette Thiart
Potato Certification Service	Mr Andre Wessels
Plantovita & PLS	Mrs Marieta Botha
Plantovita & PLS	Mrs Anel Espach

PLS's mission involves the delivery of services to the industry:

- which are based on sound scientific principles,
- which are carried out by qualified and trained personnel, and
- which are cost effective.

PROKON

CONTENT

VISION, MISSION AND VALUES

Vision

To set standards and exercise control over the quality of agricultural produce to promote local and foreign marketing and to ensure that consumers receive products that are safe and represent quality.

Mission

The delivery of a comprehensive cost-effective service to the fresh produce industry in South Africa through:

- A quality assurance service on fresh produce
- A quality and advisory service for the trade
- Maintaining a grading, extension and training program
- Promoting food safety and hygiene
- A statistical information system with relevant information to producers and other stakeholders
- Solving the problems of producers, buyers, consumers, processors and packers
- Conveying a positive image of the fresh produce industry

Values

- Impartiality
- Integrity - Internal (colleagues)
  - External (clients)
- Professional conduct and expertise

CHAIRPERSON'S REPORT

RUDI HEINLEIN

Prokon has grown into a company whose services as a preferred service provider in the fresh produce industry are becoming increasingly in demand, even overseas, and for quite some time has not been one that only inspect potatoes on fresh produce markets in accordance with its role as assignee of the Department of Agriculture, Forestry and Fisheries (DAFF). It is also already old news that Prokon has been appointed by the DAFF to also conduct quality inspections on those vegetables and fruits as promulgated in the government gazette, which further underlines the company's status as a primary service provider in quality assurance.

The delivery of inspection services

During the 2016/2017 year under review Prokon attained mixed results in so far as its responsibilities as assignee of the DAFF were concerned. In the case of potatoes the inspections went smoothly with the exception of the inspection problems experienced with the size groups during the year, the small group of potato producers who still fail to comply with the marking requirements and under-weight bags delivered to the market. I am convinced that the success of the inspection service on potatoes is the result of the decision taken by the potato industry some time back that potato inspections are necessary to build the image of the product and protect the consumer, with accompanying financial advantages for the producer. Potatoes South Arica's promotional campaign is admittedly the driver behind the increase in the per capita consumption of potatoes during the past decade, but if it was not for the good image of the product that supported the campaign, very little would have come from it.

As far as inspections on other vegetables and fruits are concerned, Prokon was less successful. Although agreements were put in place to conduct the inspections on the products at distribution centres, the retail outlets to whom they deliver and other retail groups, some of the representative fresh produce bodies were less accommodating to accept the implementation of the inspection service and the accompanying inspection fee. However, we are full of confidence that we shall be able to convince the parties to agree to the implementation of the official inspection fee in the forthcoming year.

Worldwide quality assurance and food security

It must be accepted that as is the case worldwide, the South African authorities' continued insistence that the South African consumer has to be protected, will not lessen and more additional measures will rather be instituted to ensure this. A perfect example thereof is of course the implementation of the inspections on other vegetables and fruits for which Prokon is responsible. This means that the fresh produce industry, just like any other industry supplying products and services to the consumers, does not really have a choice but to ensure that the products put on the consumer's plate represent quality.

However, it is not only consumer protection by government institutions that drives quality assurance; the consumer is also getting involved in the battle to ensure that his/her purchases comply with the official guidelines as well as personal needs and requirements, and naturally offer value for money. This goes hand in hand with food

safety and the so-called intrinsic quality values of which the protection of the environment and its people form part, and which are directly linked to the traceability of the product – aspects that will be addressed by an inspection service. In this regard research has found that the consumer is becoming increasingly aware of aspects such as water pollution and degradation in soil quality that, amongst other things, are caused by production practices and which consequently impact on the consumer's well-being and health. There is also an increased awareness about the importance of food safety and the protection of the environment and its people that makes the concept of quality assurance that much more important.

Those producers and institutions for whom it is important to protect the reputation and image of their products and businesses, have no other choice but to ensure that the products they deliver represent quality – something that is only possible through the introduction of transparent quality assurance mechanisms throughout the value chain.

It is also important that the fresh produce industry takes due cognisance of the worldwide focus on healthy eating which led to fresh vegetables and fruit becoming one of the most important snack alternatives. The so-called centennials who would rather buy products that are fresh, natural and local, offer us the ideal opportunity to optimally promote the consumption of locally produced fresh vegetables and fruits. However, it is not only the high LSM consumers who focus on quality. The lower LSM buyers who purchase their produce on the fresh produce markets are increasing demanding higher quality products, even if they have to pay more. To them quality products that offer value for money is of primary importance. The ball is now in our court to ensure that our products comply with their requirements – products that define quality.

Prokon's financial position

Financially it is going well with Prokon. In respect of the 2016/2017 year under review the company has managed to increase its earnings from the inspections and other commercial activities to R11 275 562, which is about 15% higher compared with the previous year. However, it could have been much better if it was not for the slow implementation of the inspection service on all other vegetables and fruits. It is especially the income earned from the delivery of commercial services that took a bad knock because the institutions cancelled service contracts in anticipation of the outcome on the implementation of the official inspection service on other vegetables and fruits. A further aspect that should be taken into account is the additional financial pressure brought about by the appointment of the additional quality controllers to conduct the additional inspections on the other fresh vegetables and fruits.

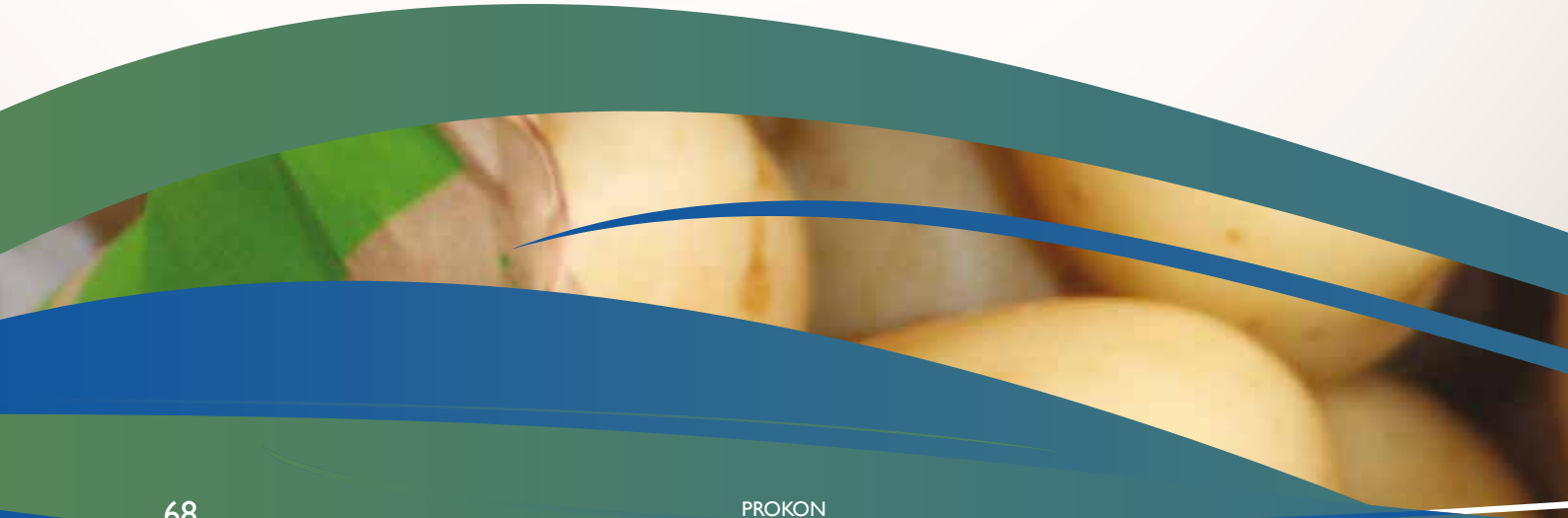
Conclusion

It is imperative for producers to visit the fresh produce markets as part of their marketing activities. The market floor offers the producers the ideal opportunity to see how their consignments compare with that of other producers, how inspections are conducted and what are important to the market agents and their buyers. Also regularly visit Prokon's website www.prokon.co.za for information on aspects that directly involve your product and the marketing thereof.

As already mentioned the 2016/2017 year under review was interspersed with challenges that really hampered the execution of the day to day activities from time to time. Luckily we have a personnel corps who, under the leadership of Prokon's chief executive officer, Mr Etienne Booyens, time after time managed to face the challenges head-on and delivered a top quality assurance service – to all of you, thank you.

My final word of thanks goes to the members of the Prokon board of directors for your cooperation and support which made it possible to take the right decisions to the benefit of the company, the potato industry and other role players in the fresh produce industry. We shall do so again next year!

Rudi Heinlein
Chairperson



REPORT OF THE CHIEF EXECUTIVE OFFICER

ETIENNE BOOYENS

Although reporting in the Potato Industry Report should by the nature of things focus on the quality assurance service Prokon rendered to the potato industry in accordance with its appointment as assignee of the DAFF, it is impossible not to refer to the services the company renders under contract to industry-related bodies, as well as the services rendered in terms of its appointment by the DAFF as assignee to ensure that all other vegetables and fruits, as promulgated in the government gazette, also comply with the prescribed quality requirements.

During the 2016/2017 year under review potato-related matters ran smoothly, except for the inspection problems initially experienced with the size groups. As far as the inspections on other vegetables and fruits are concerned success was a mixed bag because some of the other industries were less inclined to accept the implementation of the inspection service and the payment of the relevant inspection fee. Unfortunately it is not a matter that can be rectifies overnight, but we are confident that an agreement will be reached with all the role players through the intervention of the DAFF in the forthcoming year.

SERVICE DELIVERY

Potato industry

With regard to Prokon's contribution to the success of the potato industry, it should not only be measured in terms of the delivery of a quality assurance service with associated benefits for all role players in the potato value chain, but also in respect of the support role it played in solving problems and by providing industry-related statistics to facilitate production and marketing planning, and thereby optimising profitability in potato production. We also started with the updating of the colour plate book that serves as an aid for quality controllers during inspections. This publication greatly contributes to uniform enforcement of the regulations on all markets.

During the 2016/2017 year under review 41 133 potato consignments (97 679 198 bags) were inspected on fresh produce markets country-wide which represent an increase of 3.8% compared to the previous year.

The direct delivery of potato consignments to, e.g. distribution centres and shops, compelled Prokon some year back to increase inspections at these centres, the shops they supply and other retail chains to level the so-called playing field. During the year under review 3 760 inspections were conducted at distribution centres and shops, compared to 3 171 inspections during the previous year. This represents an increase of more than 18%. These inspections apply to potatoes as well as all other vegetables and fruits.

Commercial services

The quality-related services that Prokon rendered to other local fresh produce bodies under contract in the past, have decreased significantly due to its appointment as assignee to conduct quality inspections on all vegetables and fruits. Prokon nevertheless managed to secure an agreement with an European quality assurance company to render specific quality services which is an indication that the services provided by Prokon are starting to be acknowledged in the international quality services milieu.

FINANCE

Prokon's financial position is sound. The income for the year under review amounted to R11 275 562 which represents an increase of about 15% compared to the previous year's income. However, it could have been much better if it was not for the problems experienced with the implementation of the inspection service on all other vegetables and fruits.

The company currently generates income through the rendering of inspection services on potatoes and on all other vegetables and fruits in accordance with its appointment as assignee for both categories. In addition it also earn an income from the delivery of so-called commercial services to related bodies in the fresh produce milieu. To ensure that the income generated from the different sources does not become mixed-up the necessary adjustments have been made to the accounting system.

As far as the 2016/2017 audit of Prokon's financial records is concerned, an unqualified audit report was issued by Fourie & Botha, our external auditors.

PERSONNEL

Prokon currently has 66 personnel members in its employ of which 34 are quality controllers who conduct inspections at national fresh produce, distribution centres and shops, as well as 27 assistants who assist the inspectors in the execution of their duties. The remaining seven personnel members provide the administrative support services, which in my opinion is a healthy ratio.

Little personnel fluctuation was experienced during the year under review, which can primarily be ascribed to the fact that the quality controllers received a market related remuneration. If the amount of time and money spent to train quality controllers are taken into account, it is worth the expense, especially in view of the extension of responsibilities.

Mr Henry van Deventer, who stayed on as Prokon's technical manager after his retirement in 2015, has decided to finally retire and left the company's employ on 30 June 2017.

CONCLUSION

Although it does not reflect in Prokon's financial position, the company had a difficult year in view of the implementation of the official inspection service on other vegetables and fruits, which just did not want to work according to plan. However, I am confident that we shall be able to resolve all outstanding differences and problems in the forthcoming year in order that Prokon can proceed with its primary task, i.e. quality assurance to the benefit of all role players in the fresh produce supply chain, including the consumers.

My thanks goes to a board of directors who supported us all the way and a special group of people who comprise the personnel corps – your dedication and hard work as a team ensured that Prokon remained on track to attained the agreed-upon goals to a large extent. In closure I wish to extend a special word of thanks to Mr Rudi Heinlein, Prokon's chairperson, and Mr Stanley de Lange, the company's Audit Committee chairperson, for your support and advice throughout the 2016/2017 year under review.

Etienne Booyens
Chief Executive Officer

BUSINESS REPORT

THE COMPANY

Product Control for Agriculture (Prokon) is a non-profit company under the Companies Act, No. 71 of 2008 that renders an inclusive quality assurance, product management and grading service to the South African fresh produce industry.

Significant progress has been made during the 2016/2017 year under review in respect of SANAS (South African National Accreditation Service) accreditation and it is anticipated that the necessary audits will be completed before the end of 2017. This will mean that Prokon will be the only company with SANAS accreditation that provides quality assurance services to the fresh produce industry.

THE BOARD OF DIRECTORS

The Prokon board of directors comprises of representatives from the fresh produce industry in order to ensure that all matters that impact on service delivery to the industry are addressed. The current board members are:


Rudi Heinlein - (Chairperson)


Stanley de Lange


Johannes Tsotetsi


Dr Simphiwe Ngqangweni


Human du Preez

THE PERSONNEL

Prokon is duly aware of its responsibility to continuously deliver a professional quality assurance service to all role players in the fresh produce supply chain, and by implication also to the consumer. To fulfil its responsibilities as watchdog on locally produced fresh produce the company has 66 personnel members in its employ of which 34 are suitably qualified quality controllers who render inspection services on fresh produce markets and 27 assistant who assist them in the execution of their duties. The increase in the number of quality controllers in Prokon's employ is a direct consequence of the company's appointment as assignee to also deliver an inspection service on all other vegetables and fruits.

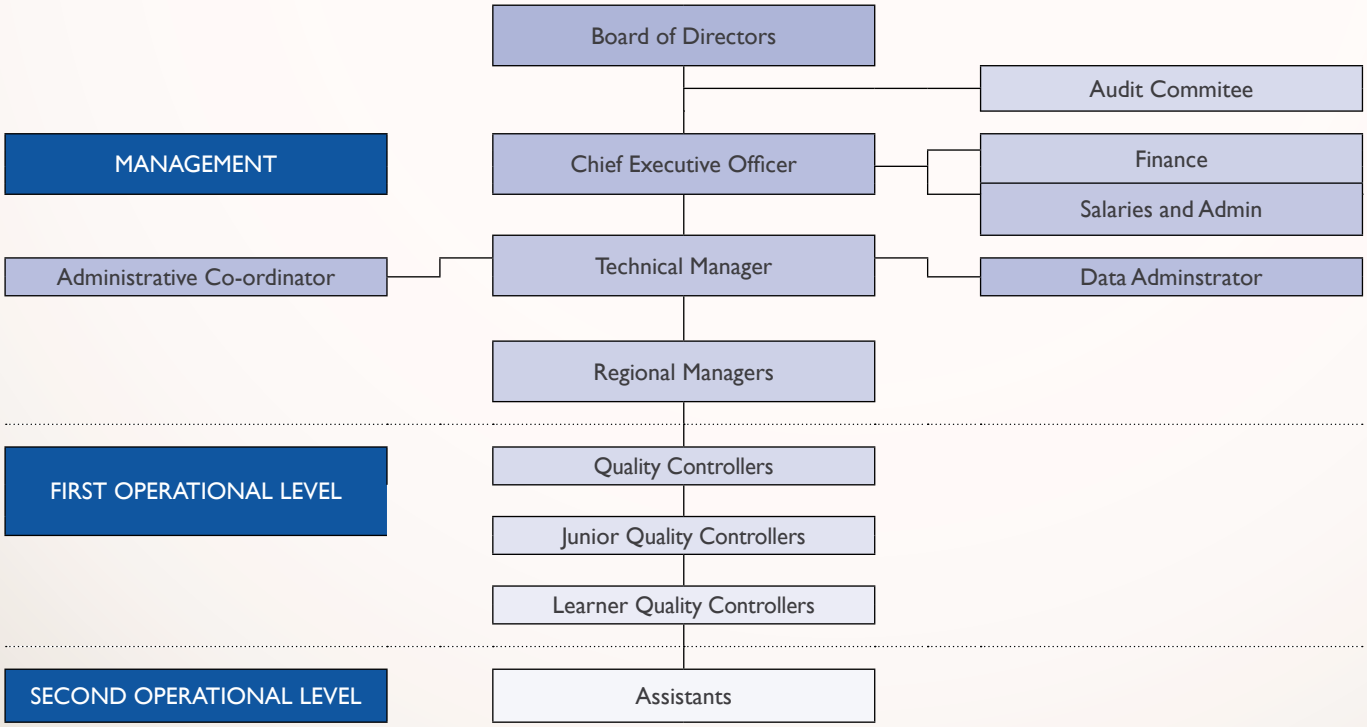


Figure 1: Company Structure

SERVICE DELIVERED

The services delivered by Prokon, can be categorised as follows:

- Services rendered as assignee of the DAFF in respect of potatoes.
- Services rendered as assignee of the DAFF in respect of other vegetables and fruits.
- Commercial services rendered to Potatoes South Africa.
- Commercial services rendered to other bodies in the local and overseas fresh produce industries.
- Knowledge transfer.

Services rendered as assignee of the DAFF in respect of potatoes

Prokon was officially appointed by the DAFF in 1993 as assignee to enforce the regulations applicable to the grading, packing and marketing of potatoes destined for sale in South Africa, and to report back to the various role players. These regulations were promulgated under the Agricultural Products Standards Act, No. 119 of 1990.

In terms of its appointment Prokon renders a comprehensive inspection service on potatoes whereby the quality of the product is continuously controlled and feedback is provided to the producers in order to maintain the standard of this marketable product in accordance with the provisions in the regulations. This ensures that value is added which benefits the producers and assures that consumers receive quality products.

The above service is supported by a database that is continuously updated. Consequently, the latest information is confidentially made available to producers on a daily basis, as well as in a revised format to Potatoes South Africa which allows the latter to address problems identified on the market floor and in the trade.

During the year under review, Prokon rendered the following services to producers who delivered potatoes to the fresh produce markets and the trade:

- Personal communication with producers in order to ensure that consignments comply with the prescribed regulations at all times. Producers were continuously informed about the age of market stocks, the quality of the produce and the correct application of the prescribed packing, marking and mass requirements.
- Making available stock statistics on markets in respect of class, size groups and packaging sizes that are of importance in the marketing and management of the potato crop. Stock and consignment management, which includes the transportation of potatoes, forms an integral part of this service delivery component.

The service provided by Prokon ensures that quality is measurable. In the case of the potato producers the service allows them to optimally manage the production and marketing of the crop which indirectly contributes to the establishment of trade marks that represent quality, and inevitably to increased demand and return on investment. In addition it is a known fact that quality and stock levels are the primary price determiners on fresh produce markets, which means that the services rendered by Prokon just add that much more value to the products of the producers. As far as the buyers and consumers are concerned, the service ensures that they purchase a product that complies with prescribed requirements. The value that this service holds for promoting the consumption of potatoes cannot be sufficiently emphasised.

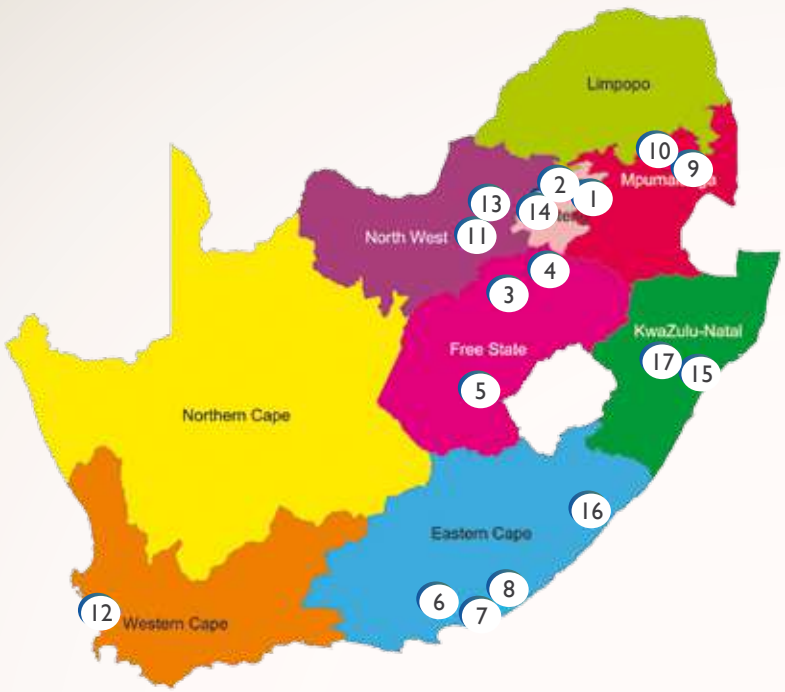
Inspections on markets

During the year under review Prokon inspected 41 133 potato consignments (97 679 198 bags) on fresh produce markets country-wide that were received from producers in the 13 potato production regions and non-producing suppliers (See Table 1).

Table 1: Consignments per production region and from non-producing suppliers (all bags)

Production region / Non-producing suppliers	Number of bags
Sandveld	8 883 637
Ceres	675 202
South Western Cape	119 960
Northern Cape	2 473 765
Eastern Cape	2 866 297
Southern Cape	66 393
North Eastern Cape	1 989 015
Western Free State	15 645 939
Eastern Free State	17 877 002
South Western Free State	4 864 304
KwaZulu-Natal	3 886 553
Mpumalanga	2 543 136
Limpopo	24 982 743
North West	4 144 980
Gauteng	2 582 232
Loskop Valley	156 729
Non producing suppliers	3 921 311

The majority of consignments received and inspected, were of high quality. Only 7.15% of consignments delivered were down-marked to a lower class. Unfortunately bags were received that still did not comply with the prescribed marking requirements, especially not indicating the cultivar, as well as being under mass.



1 Tshwane Fresh Produce Market, Pretoria
2 Joburg Market, Johannesburg
3 Welkom Fresh Produce Market, Welkom
4 Vereeniging Fresh Produce Market, Vereeniging
5 Mangaung Fresh Produce Market, Bloemfontein
6 Uitenhage Fresh Produce Market, Uitenhage
7 Port Elizabeth Fresh Produce Market, Port Elizabeth
8 North End Fresh Produce Market, Port Elizabeth
9 Mpumalanga Fresh Produce Market, Mbombela (Nelspruit)
10 Nelspruit Fresh Produce Market, Mbombela (Nelspruit)
11 Sol Plaatje Fresh Produce Market, Kimberley
12 Cape Town Market, Cape Town
13 Matlosana Fresh Produce Market, Klerksdorp
14 Springs Fresh Produce Market, Springs
15 Durban Fresh Produce Market, Durban
16 East London Fresh Produce Market, East London
17 Pietermaritzburg Fresh Produce Market, Pietermaritzburg

Figure 2: Prokon's head office is situated at the Tshwane Market in Pretoria with regional offices on the following fresh produce markets

Percentage of consignments down-marked

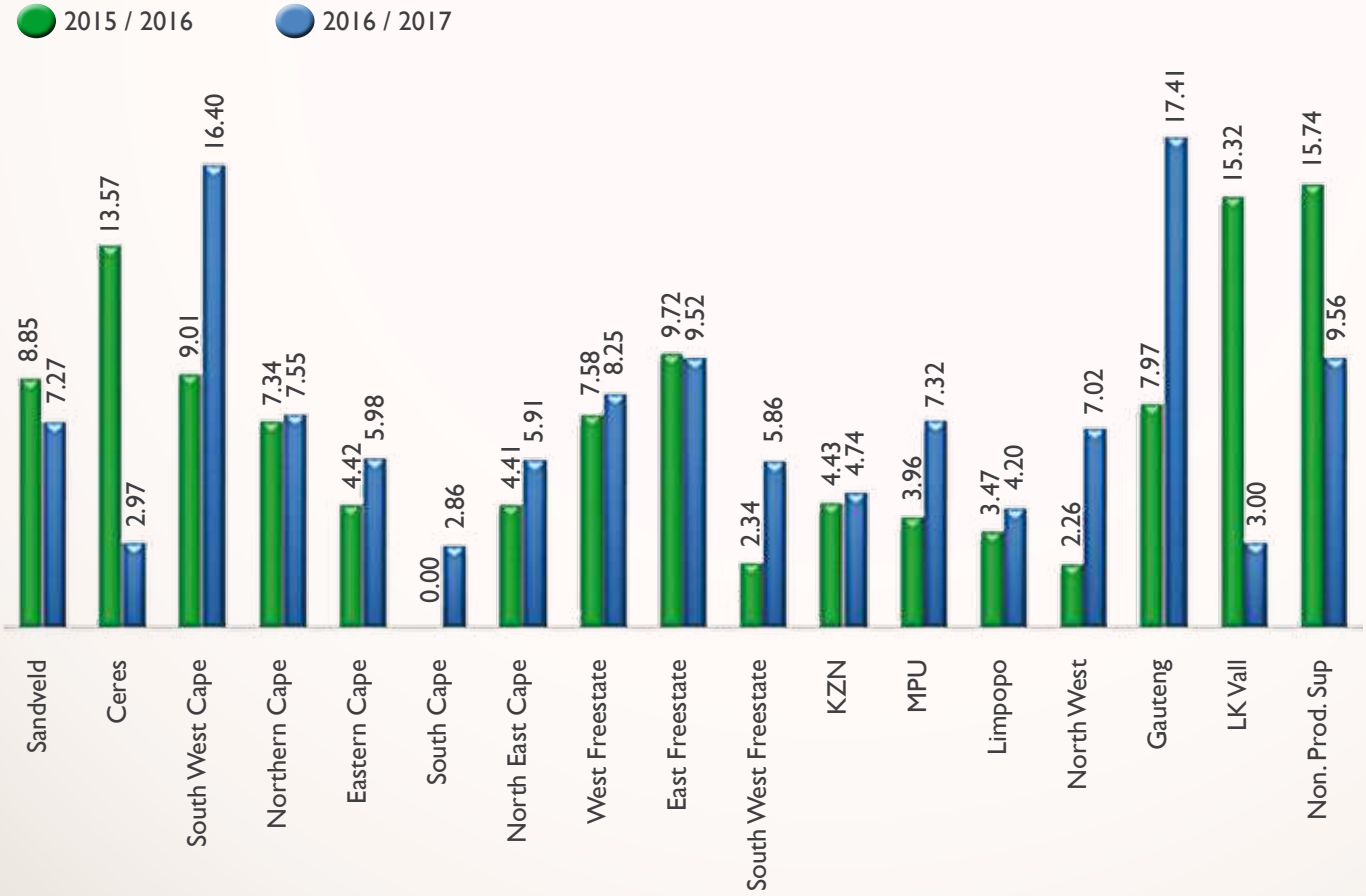


Figure 3 (above) indicates the percentage down-markings in respect of consignments received on markets from the 13 production regions and non-producing suppliers in 2015/2016 and 2016/2017.

Reasons for down-marking of consignments

Figures 4 and 5 reflect the reasons for the down-marking of consignments received from production regions and non-producing suppliers for 2015/2016 2016/2017, respectively. The main reasons for down-marking of consignments in both years were greening, browning and mechanical damage. During 2016/2017 quite a number of consignments were also down-marked because the potatoes did not comply with the relevant size group specifications. Consequently, an application for dispensation had to be lodged with the Department of Agriculture, Forestry and Fisheries to prevent consignments to be marked-down lower than a class 2. The problem can primarily be ascribed to the increase in the number of new cultivars received on markets which shapes differ from the known cultivars.

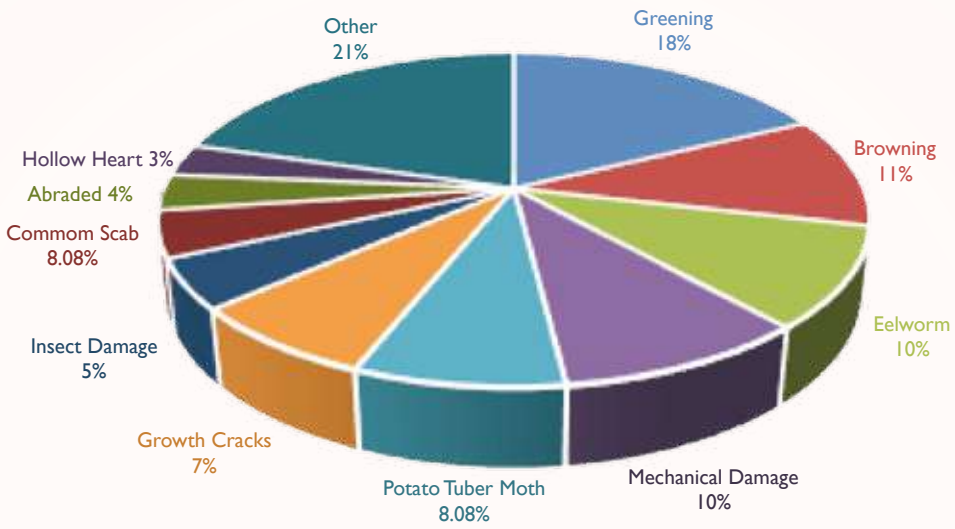


Figure 4: Reasons for down-marking on all markets – 2015/2016

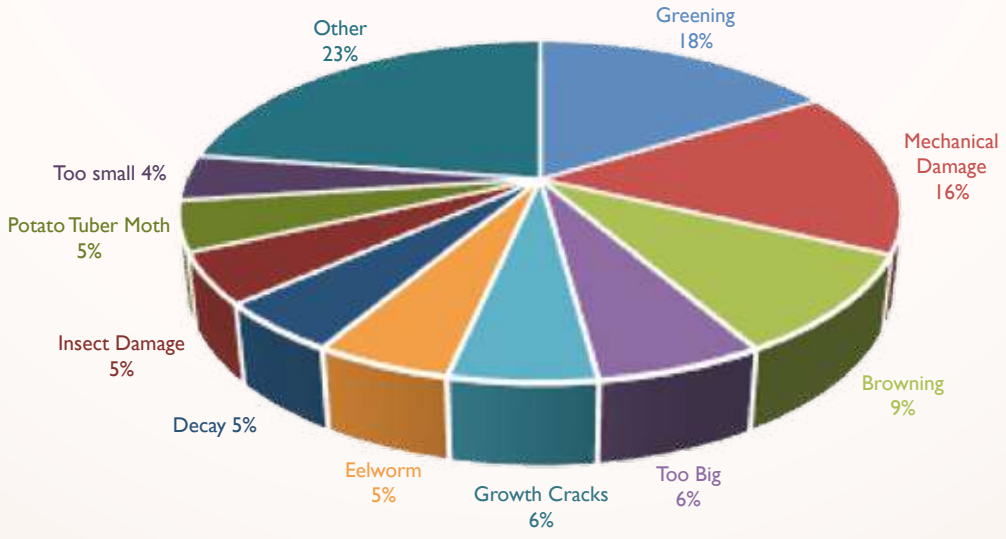


Figure 5: Reasons for down-marking on all markets – 2016/2017

Table 2: Main reasons for down-marking per production region and non-producing suppliers in percentage

Area	Common Scab	Mechanical Damage	Greening	Browning	Eelworm	Growth cracks	Water-grass	Insect damage	Too big	Enlarged lenticels	Decay	Potato tuber moth	Too small	Wilting	Other *	Total down-markings
Sandveld		8.86		53.56									11.05		26.53	7.27
Ceres			15.44	29.91										14.55	40.1	2.97
South Western Cape							19.44		25.94				14.45		40.17	16.4
Northern Cape		16.11	14.23		13.62										56.04	7.55
Eastern Cape		14.18	23.48										12.94		49.4	5.98
Southern Cape		47.37										52.63			0	2.86
North Eastern Cape		24.74	16.41					12.51							46.34	5.91
Western Free State		11.22	33.66			12.75									42.37	8.25
Eastern Free State		21.12						11.63				10.91			56.34	9.52
South Western Free State									13.36		18.53		16.42		51.69	5.86
KwaZulu-Natal	12.25		10.74					10.67							66.34	4.74
Mpuma-langa		12.53			20.2		14.51								52.76	7.32
Limpopo		16.85	27.48						10.25						45.42	4.2
North West		13.09	26.12						17.66						43.13	7.02
Gauteng		14.9		17.73					9.89						57.48	17.41
Loskopvalley							59.59		15.51	11.7					13.20	3.00
		26.53	7.27													

*Other: Refers to reasons for down-marketing other than the three main reasons

Inspections at distribution centres and retail outlets

Trade inspections on potatoes form part of Prokon's responsibility as assignee of the DAFF to ensure that as many as possible inspections are conducted at outlets in the distribution chain, to the benefit consumers. These inspections entail three inspections per month at all the distribution centres and five outlets supplied by each of the centres. During the year under review 1 985 trade inspections on potatoes at distribution centres were undertaken and 1 775 at those retail outlets supplied by the centres referred to above.

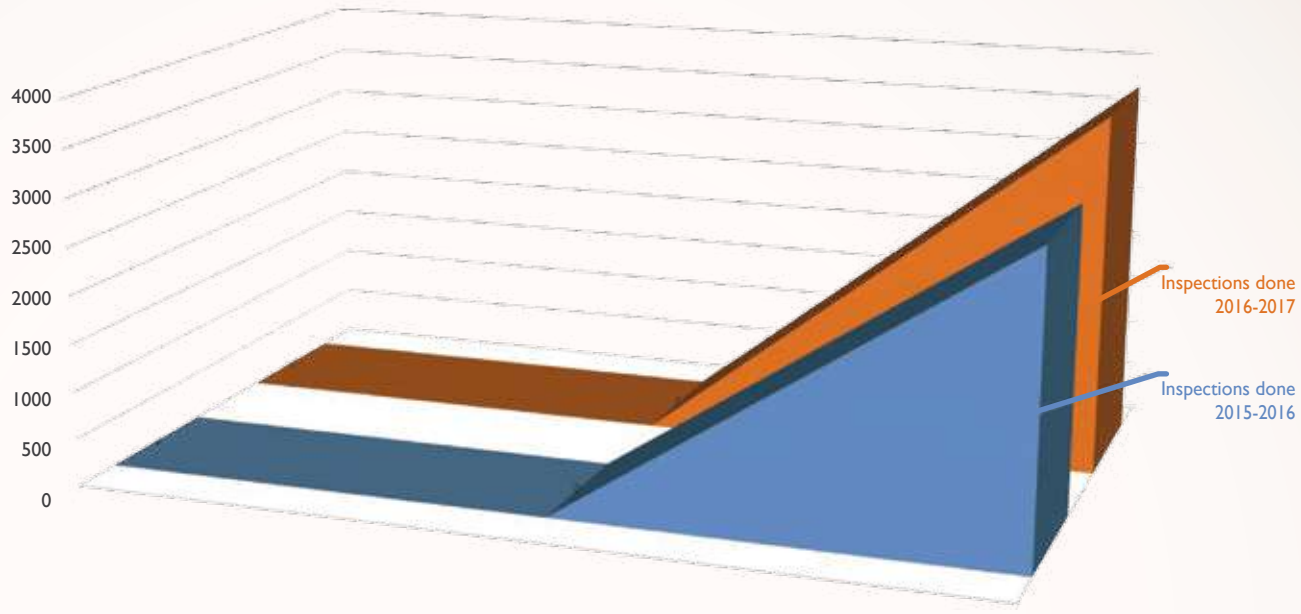


Figure 6: Inspections 2015-2016 / 2016-2017

In cases where the product did not comply with the prescribed marking and quality requirements, directives were issued and followed-up by further visits to ensure that the problems were rectified. The biggest problem experienced, was inadequate-compliance with the marking requirements during re-packing, i.e. die cultivar name, size group and class were omitted. In some cases the letter size on the packaging was also smaller than prescribed in the regulations. Reports were also sent to distribution centres to make them aware of the identified problems in order that they could implement corrective action.

Services rendered as assignee of the Department of Agriculture, Forestry and Fisheries in respect of other vegetables and fruits

In 2016 Prokon was appointed by the DAFF as assignee to deliver an inspection service on other vegetables and fruits. This service does not include potatoes, and is merely referred to in the report to provide a complete picture of Prokon's service delivery to the fresh produce industry.

The inspections at distribution centres and retail outlets referred under the heading *Inspections at distribution centres and visits to retail outlets* included inspections on the other vegetables and fruits.

Commercial services rendered to Potatoes South Africa

PROVISION OF INFORMATION

The information on Prokon's database that relates to inspections on potatoes in the distribution channel, was provided in processed format to Potatoes South Africa's Department: Industry Information on a regular basis. This information is regarded by the latter as essential to the optimal execution of its core business activities. The supplied information entails the volumes delivered to fresh produce markets per region, inclusive of different classes, size groups, cultivars, down-markings as well the reasons therefor and disease occurrence.

As part of the service, monthly reports on the volumes delivered by a specific region, accompanied by the reasons for and the percentages of potato consignments marked-down, were sent directly to the organisation's regional managers. This allows the regional managers to discuss the problems that are unique to a specific producer with him/her and to recommend corrective action. However, the biggest advantage is that should the problem extends beyond a single producer, it offers the relevant regional management the opportunity to introduce overarching action to the benefit of the production region as a whole.

OTHER SERVICES

During the year under review Prokon was also involved in the following Potatoes South Africa activities:

- Potatoes South Africa's application for dispensation for the down-marking of potatoes to class 2 because of the size group problems.
- Counting of damaged bags on fresh produce markets (Project was terminated during the year under review.)
- Quality project – only in respect of these potato producers who agreed to it.

Commercial services rendered to other bodies in the fresh produce industry

FRESH PRODUCE MARKETS

QUALITY ASSURANCE

Prokon rendered a quality assurance service to the fresh produce markets in Kimberley, Klerksdorp and Vereeniging. The service entailed quality assurance on all products and controlling marking requirements in accordance with the prescribed regulations. Attention was also afforded to general hygiene on the market floor as it contributes to a clean and thus suitable sales milieu for offering produce to the buyers. The relevant market authorities also received daily feedback together with recommendations on addressing the related problems.

HEALTH SERVICES

An independent health service was provided to the fresh produce markets in Klerksdorp, Kimberley and Cape Town. The service entails the inspection and writing-off of produce which quality had deteriorated to such an extent that it was no longer fit for human consumption. The removal of these products contributes to promoting the image of relevant markets and its agents as a preferred trading platform. The timely removal of such products also prevents other produce on the market floor from getting contaminated.

FRESH PRODUCE BODIES

As a result of Prokon's appointment as assignee to conduct quality assurance inspections on all other vegetables and fruits, the services it rendered to other local fresh produce bodies under contract decreased drastically. However, the company managed to secure an agreement with a European quality assurance company to render specific quality services.

Commercial services were only rendered to the following bodies on an ad hoc basis:

Local bodies

- South African Avocado Growers Association
- South African Stone Fruit Association
- Fruitfarm Group
- TUVU

Overseas bodies

- European quality assurance company
- Agro-Marketing Trade Agency (Namibia)

In addition Prokon also provided e-training courses in quality related fields through its website.

Knowledge transfer

Prokon used all available channels and platforms such a direct liaison with, e.g. producers buyers, market authorities, market agents, clients, industry bodies and authories, as well as attending conferences, symposiums and meetings to transfer knowledge.

However, the most important transfer of knowledge took place on the market floor during communications with buyers, especially the street vendors and buyers who trade in the townships. The encounters with street vendors and informal traders are continuously used to tipping these supply chain partners on important aspects such as the grading regulations, the keeping ability of potatoes, storing and packaging to ensure that purchases represent value for money.

IMAGE BUILDING AND MARKETING OF SERVICES

Prokon regards it of utmost importance to promote its role and image as primary service provider in the field of quality assurance on fresh produce. During the year under review the company focus on, e.g. the following to attain its goal:

- **Liaison with role players in the fresh produce industry**

  Prokon places a high premium on liaison with the existing and potential clients, on the one hand to maintain its client base and on the other hand to extend it. Consequently numerous meetings were held with the key role players in the fresh produce industry to market the specialist services Prokon is able to provide. During these meetings and by mail the company's quick guide that contains valuable information about Prokon as a company and service provider, was made available. Meetings were also held with relevant government institutions in order to keep abreast of the latest developments and to ensure that Prokon's services comply with the prescribed guidelines at all times.

- **Potato data base**

  Next to the inspection service, the potato data base is Prokon's biggest asset and therefore an important marketing tool. The information loaded onto the data base offers the user an excellent aid which is of primary importance in the production, harvesting and marketing of potatoes.

  Information most in demand included:

  - Number of bags delivered per market.
  - Number of bags per size group and class delivered per market.
  - Volumes delivered per region, as well as nationally to all markets.
  - Cultivar volumes delivered per region as well as nationally to individual markets.

  Additional information that was made available included diseases and defects as well as statistics on down-markings and the relevant reasons.

  The upgrading of the data base was also commenced with which also included the installation of new software to expand the database's user ability and to make it more accessible.

  The tracing of diseases and pests cannot emphasised enough. This information were made available to potato researchers and the industry with a view to, inter alia, implement preventative and control measures. The value lies especially in that the source of the diseases and pests can traced back to farm level.

- **Articles in CHIPS**

  Articles on potato deliveries per production region and by non-producing suppliers were published in every edition of the industry magazine, CHIPS.

- **Prokon website**

  As is the case with all companies, Prokon duly recognises that electronic liaison is imperative to image building and to convey information. Prokon's website, which is continuously being updated to increase its user value as well as to make it more user, offers the visitor a comprehensive overview of the activities of the company and the deliverable services. It also contains the latest official quality regulations applicable to potatoes as well as colour plates that depict the quality standards. The website also makes it possible for visitors to obtain information on the official regulations applicable to the most prominent fresh products.

NOTES